ENGINEERING NEWS-RECORD

ENR's Eyewitness Report on Russian C

E B POWER
UNIVERSITY MICROFILMS IN
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GUTS!

STANDARD Model R-M
ASPHALT PLANTS
manufactured in 2000, 3000, 4000, 5000, or 6000 pound batch capacities. The Standard Plant is tailored to fit your requirements. Plant layouts may be semi-portable or portable.

...WITH POWER TO SPARE

STANDARD Plants have ability to "take it"

The rugged, massive Standard R-M Asphalt Plant packs more power, with extra capacity, over-sized vibrating screens, elevators, and dryers; larger bearings, heavier shafts and giant sized hi-speed pugmill. This gives you the toughest and most economical asphalt plant in the world.

Simplex exclusive push-button operation saves man-hours—delivers the maximum hourly tonnage of specific bituminous mix day-in—day-out.

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Attention Contractors!

The New STANDARD Portable T. M. Plant
offers top production. A *complete* self-contained batch type Asphalt Plant...on wheels. One man operates! Has exclusive "SELF-LIFT" erecting device. RUGGED – ECONOMICAL – SIMPLE. Mixes up to 60 to 80 tons per hour!

PARTS WAREHOUSES IN LOS ANGELES AND DECATUR, ILLINOIS

Riddle Quarries Cut Costs with

MURPHY DIESEL POWER

"70% lower maintenance
15% lower fuel costs
12% higher production"
says JOHN H. RIDDLE

Murphy Diesel's ability to cut maintenance and fuel costs, and help increase production, is an important item on any construction job. *But that's not all John Riddle likes about his Murphys!*

"We purchased Murphy," he says, "because our experience with some second-hand, smaller Murphy engines demonstrated that Murphy starts easier, runs cooler, delivers steadier, more uniform power at more economical operation costs, with added reserve for excess demands. We found this engine to be free of ordinary breakdowns, and capable of delivering long, trouble-free service even through 20-hour shifts."

Riddle Quarries, of Salina, Kansas, has 4 shovels, 3 secondary and 1 jaw crusher primary plant, all powered by Murphy.

Ask your Murphy Dealer about the advantages of Murphy power on your job.

Four of Riddle Quarries' 8 Murphy Diesels power both shovels and the portable primary and secondary plants used to furnish blanket and rip rap material to the U. S. Bureau of Reclamation on the Lovewell Dam.

377N

MURPHY DIESEL

HEAVY-DUTY POWER for Construction

Murphy Diesel engines and power units are available in sizes from 96 to 264 H.P. with engine speeds of 1200 and 1400 rpm. "Packaged" generating units are available with capacities ranging from 64 to 165 K.W.

MURPHY DIESEL COMPANY

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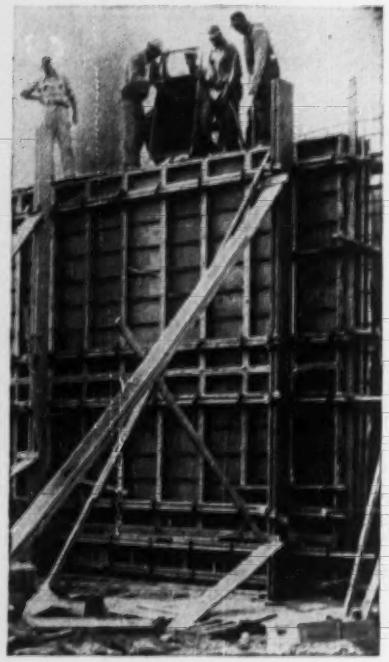

Pouring Costs Cut 25% with Symons Forms . . .

Joseph R. Farrell, Inc., Philadelphia, general contractor, saved more than 25% in pouring costs on the new Cardinal Dougherty High School through the use of Symons Forms. 5,522 feet of Symons Forms were purchased for the job, and were used more than eight times. A total of 50,000 square feet of forming was erected for the 1600 yards of concrete.

Contributing to the speed and economy of the pouring was the use of 2" x 12" strong backs. The strong backs were held in place by 12" standwall ties used as strong back ties to make the horizontal joints stay plumb for the 18 and 20 foot walls. The strong backs permitted continuous pouring of the foundation walls.

With your plans, our engineers will prepare a complete form layout, bill of materials, and make recommendations for the most efficient and cost saving method of forming.

Symons Forms can be rented with purchase option. Symons Clamp & Mfg. Co., 4265 Diversey Avenue, Dept. M-7, Chicago 39, Illinois.

Workmen stop forms while a new pour is started.

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EIGHTY-THIRD YEAR OF PUBLICATION

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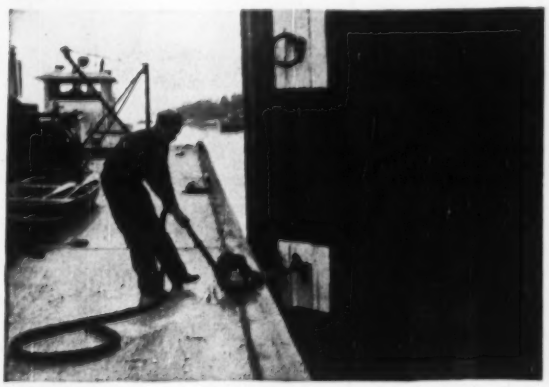
Another Tough Protection Job—Solved by TARSET®

THIS oil company river barge terminal near Mt. Vernon, Ind. is a busy place. So busy, in fact, that wooden pilings soon break down under the wear and tear of heavy barge traffic.

Providing more durable docking facilities was accomplished by replacing the wood piling with cylindric steel cells, constructed with steel piling plates driven into the river bed and strengthened with a fill of washed sand and gravel.

But the problem *then* was to protect the cells from corrosion, and from contact with the heavy barges.



Pitt Chem *Tarset* was selected for the job for two principal reasons:

1. *Tarset* is a unique and patented combination of coal tar and epoxy resin. In three years of service history, it has proven extremely resistant to severest moisture conditions.

2. *Tarset's* adhesion to metal is so great that it is virtually impossible to remove except by sand-blasting. So *Tarset* was ideal for resisting abrasion from barge movement.

What's *your* most troublesome corrosive material? Chemicals? Petroleum? Industrial Wastes? *Tarset* has an amazing performance record against all of them. • *Ask for complete information about revolutionary Tarset today! A letter or call will receive our prompt attention.*

COAL CHEMICALS • PROTECTIVE COATINGS • PLASTICIZERS • ACTIVATED CARBON • COKE • CEMENT • PIG IRON

BIG ST. LAWRENCE SEAWAY earth-moving job—improving the channel at Sparrowhawk Point and Toussaints Island—is being done by Merritt-Chapman & Scott. Tough jobs like this are made easier by simplifying lubrication. In fact, all major lubrication can be handled with no more than six lubricants, if you use a Texaco Simplified Lubrication Plan. A Texaco Lubrication Engineer will

TUNE IN:
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radio broadcasts
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TEXACO

TEXACO

show you how it can help you cut lubricant inventory, avoid mistakes, and save both time and money.

Moving millions of yards of earth for the St. Lawrence Seaway... How Texaco helps

Move millions of yards of earth—and do it on schedule—and you prove you've got good equipment and good lubrication, especially when temperatures range from 90° above to 25° below.

Here are some of the ways Texaco Products help keep big earth-moving jobs on the go.

Keeping engines clean. *Texaco Ursa Oil Super Duty* keeps rings free; valves seating properly. You get full compression and complete combustion. And every piece of equipment stays on the job—always at full rated power.

For air compressors and hydraulic mechanisms, use *Texaco Regal Oil R&O*. It keeps compressor systems clean, prevents rust, sludge and foam in hydraulic systems. To reduce the performance cost for differentials and transmissions, use *Texaco Universal Gear Lubricant EP*. For general lubrication, *Texaco Marfak Heavy Duty Special 2* is a multi-purpose grease suitable for wheel bearings, chassis, water pumps and other lubrication.

Ask a Texaco Lubrication Engineer to help you simplify your lubrication and reduce your costs. Just call the nearest of the more than 2,000 Texaco Distributing Plants in the 48 States, or write:

The Texas Company, 135 East 42nd Street, New York 17, New York.

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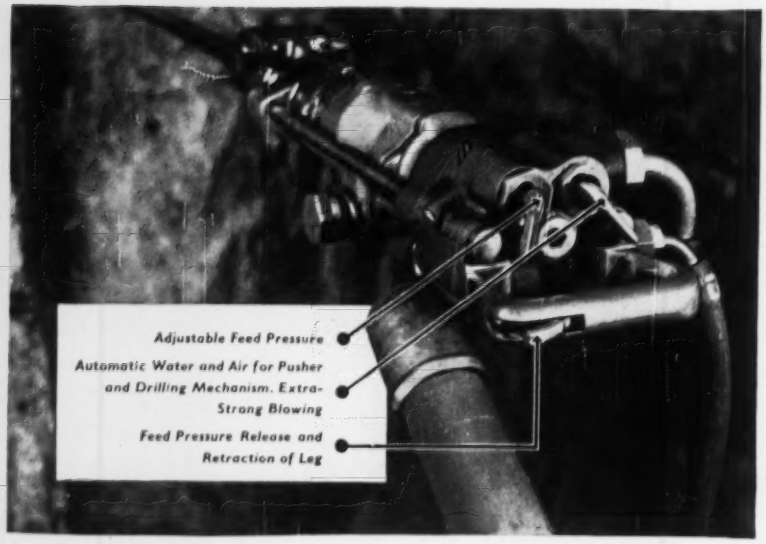
FOR ALL CONTRACTORS' EQUIPMENT


Adjustable Feed Pressure
Automatic Water and Air for Pusher and Drilling Mechanism. Extra-Strong Blowing
Feed Pressure Release and Retraction of Leg

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ATLAS COPCO LION

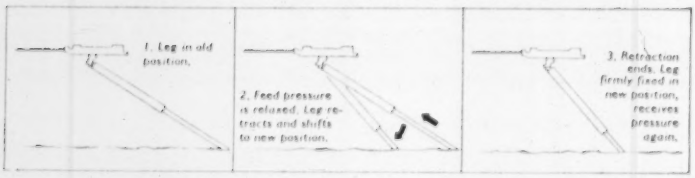
the most remarkable heavy-duty pusher-leg drill on the market

The Lion is the only rock drill with retractable leg operated from the backhead, which means quicker repositioning. It is also one of the very few drills on the market with all the operating valves controlled by one hand. Both these features make for great savings in time and manpower: in addition, the Lion has an especially high drilling speed compared with other drills in the same class.

THE RIGHT STEELS FOR THE LION

With the Lion choose Sandvik Coromant tungsten-carbide-tipped integral steels—the most widely used in the world—or Sandvik Coromant detachable bits and extension steel equipment.

PUSHER LEG ADVANCES WITH DRILL IN ACTION


1. Leg in old position.
2. Feed pressure is released. Leg retracts and shifts to new position.
3. Retraction ends. Leg firmly fixed in new position, receives pressure again.

Write, phone or cable today for further details to any of the addresses below:—

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Reader Comment

Civil Engineering Plus

SIR—I am very happy to see that your magazine, the most widely read in the industry, would pick up a course (Can Construction Be Taught In College? ENR Nov. 7, p. 21) which I suggested in an article in "THE CONSTRUCTOR" in January, 1956 and give it such prominent discussion at this time. I would have preferred that you had publicized the entire course but you have done very well as is.

The construction firms that get the publicity and whose need for engineers constantly is drawn to public attention are the big companies with big staffs, most of whom become specialists and thereby become of most use to the company employing them.

However, the great bulk of civil engineering graduates go to small companies and it is those boys who need the broad, diversified education because they brush up against all the problems in the small contractor's office.

Therefore the big contractors who employ scores of civil engineers say "what we want is a civil engineer." A small contractor who employs anywhere from two to ten says he wants the boys' education to encompass something besides strict civil engineering.

My course is aimed at those boys and the needs of those employers. I do not in any way wish to interfere with the education of civil engineers in a four-year course leading to a degree in civil engineering. I believe your article would have been improved with some emphasis on that situation. I do, however, want to sincerely commend the article and its timeliness.

W. A. KLINGER
W. A. Klinger, Inc.
Sioux City, Iowa

Building Height in Error

SIR—Your article concerning lift slabs in Mexico and coming projects of that kind in this country (ENR Nov. 7, p. 67) was of very great interest to me. As both structural designer and supervising engineer on the lift-slab garage

(*Continued on page 12*)

Engineering News-Record welcomes expression of opinions from its readers. Comment should be as brief as possible and pertinent to subjects of current construction importance. Letters should be addressed Editor, Engineering News-Record, 330 W. 42nd St., New York 36, N. Y.

Look for this nearby Goodyear dealer sign for better tire values —better tire care.

In the mountains of Guatemala, the last links are being forged in the 3,179-mile right-of-way from Texas to Panama. Landslides (as shown below) are the order of the day—but early in '58, the first wave of American tourists is due to swap dollars for blankets, bananas and local color! Two ten-hour shifts push the work forward, and Goodyear tires—Hard Rock Lug, Sure-Grip Lug and All-Weather Earthmover—help keep the job rolling, faster, surer and at lowest cost-per-mile.

Watch "Goodyear Theater" on TV—every other Monday 9:30 P.M., E.S.T.

Tires move more yards for less

when built with **Triple-Tough 3-T Nylon Cord!**

ALL 3-T NYLON CORD—*Tubeless or Tube-Type*

HARD ROCK LUG | **SURE-GRIP LUG** | **ALL-WEATHER EARTHMOVER**

Like steel, tire cord must be *tempered* to be tough. Goodyear's exclusive 3-T process, involving Tension, Temperature and Time, *triple-tempers* cord to make it TRIPLE-TOUGH—to give you longer tire life, lower cost-per-mile.

Known as *"the greatest tire SAVER in 23 years,"* Triple-Tough 3-T Nylon Cord is a Goodyear exclusive.

During years of use, on the toughest jobs on earth, Goodyear 3-T Nylon Cord tires have literally saved *millions* for contractors and truckers who realize that the final cost of any tire depends entirely on *what they get out of it.*

The fact that more tons are hauled on Goodyear tires than on any other kind, certainly suggests that most operators get more yards-per-dollar, more miles-per-dollar, on Goodyears. If *you're* not already using Goodyear 3-T Nylon tires on your equipment, try them! Goodyear, Truck Tire Dept., Akron 16, Ohio.

Buy and Specify

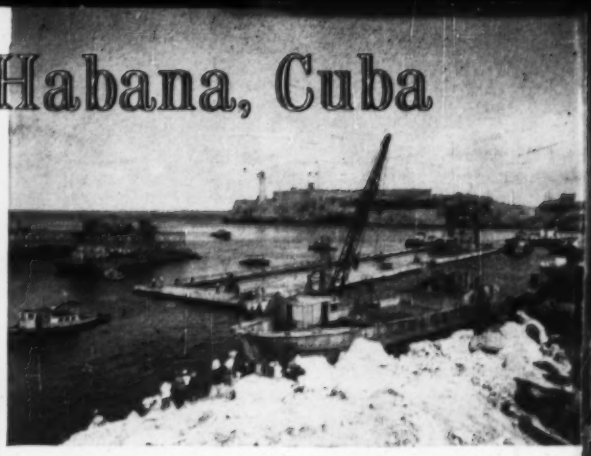
GOODYEAR

MORE TONS ARE HAULED ON GOODYEAR TRUCK TIRES THAN ON ANY OTHER KIND

All-Weather, Sure-Grip—T. M.'s The Goodyear Tire & Rubber Company, Akron, Ohio

Tunel de la Habana, Habana, Cuba

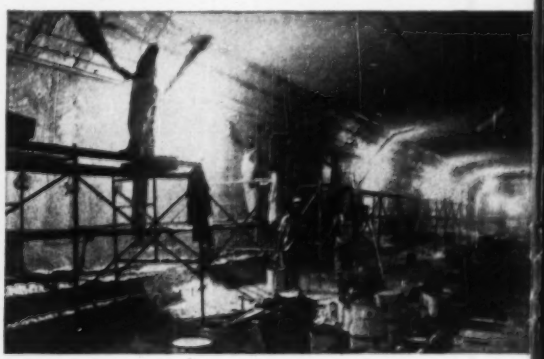
Remarkable engineering accomplishment, protected from water with the **Thoro System Products**



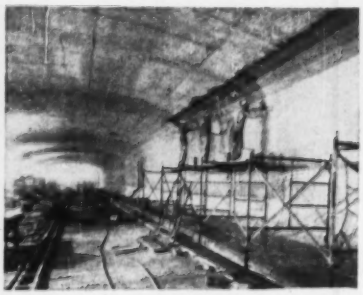
Four-lane, underwater tunnel, connecting Malecon Drive, City of Havana, Cuba with Guanabacoa near the famous Morro Castle, opening the sparsely-populated peninsula to residence and commercial activity.

Design, engineering and construction by Societe des Grand Trawaux de Marseilles, Paris, France, 733 Meters Long, 23 Meters Wide, 7 Meters High, cost $28,500,000.00. Waterproofed inside and outside with THORO System products, THOROSEAL, WATERPLUG and THORITE. Two lanes will be opened by December, 1957.

Mammoth precast concrete sections are floated to location by attached pontoons, lowered 24 meters under water and connected to previously-sunken sections. ***Note the famous Morro Castle. Top, center background.***



From Havana side, tunnel entrance grades down to harbor pool level.



Thoro System Products applied, completes the job!

Preparing interior surface for WATERPLUG and one brush and one trowel coat of THOROSEAL. All walls, floors and ceilings are sealed with THOROSEAL.

Two double-lane tunnel sections take shape; forms will be filled with poststressed concrete.

THOROSEAL is being applied to all interior surfaces. Over 800 drums of WATERPLUG have already been used, where water was entering and where sections were joined together. All honeycomb and construction faults were sealed with THORITE Patching Mortar, before lowered to position in the bay.

Precast sections of tunnel, honeycomb patched with THORITE Patching Mortar and entire surface protected with THOROSEAL.

Thousands of drums of THOROSEAL, WATERPLUG and THORITE Patching Mortar are being used on this vast project, which will be completed in February, 1958.

Write for literature "HOW TO DO IT"

Standard Dry Wall Products, Inc.
NEW EAGLE, PA. CENTERVILLE, IND.

FREE WIRE ROPE RECOMMENDATIONS TO HELP YOU SAVE MONEY

Prepared by Experts, Booklets Give Specialized Wire Rope Uses in 5 Fields

What do you do when you have to decide what rope to order? Do you rely on your memory or look up the last order?

Here's an easy way to get the right answers *fast*. Refer to the Wire Rope Recommendation Booklet prepared by HAZARD engineers as a result of years of work in the field with every kind of machine that calls for wire rope. There's a different booklet for each of five basic industries—general contracting, industrial, mining, logging and marine. We'd like you to have these booklets for quick reference because they'll save you time and money by giving you the right answer of the right rope to use for any job in your field.

Written in clear, non-technical language, these new booklets are from 8 to 24 pages long. In addition to detailed wire rope recommendations for your own field, there is a page of LAY-SET wire rope characteristics which explains fully the basic terms of diameter, construction, lay, grade and core . . . all necessary in understanding wire rope nomenclature. Many action pictures of equipment at work also help to show the reader how recommended wire ropes are actually used on the job.

Send today for copies of any or all of the 5 free Wire Rope Recommendation Booklets. Simply check the booklets you would like to receive, in the coupon provided.

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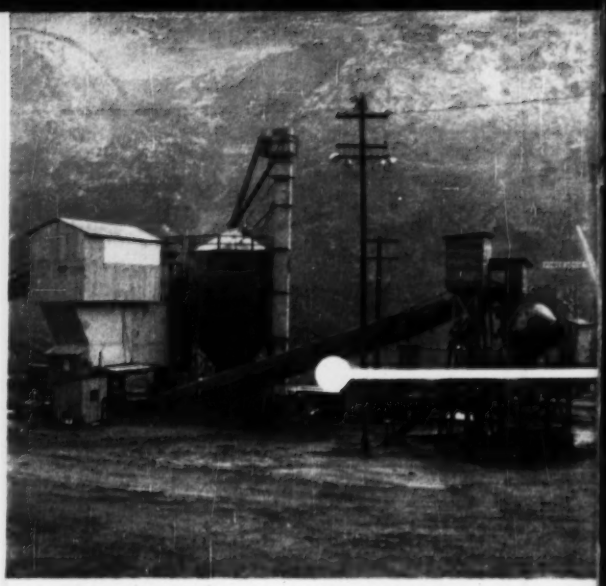
NOBLE·MOBILE does the work of ing all concrete for large hydro-

Plant-on-wheels batches 132,000 cubic yards at job site permitting joint use by 2 contractors. Costly erection and investment in second plant saved.

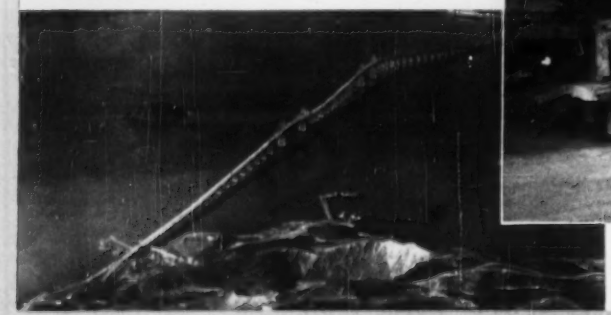
The Swift Hydroelectric Project for Pacific Power and Light Co., Cougar, Washington, 45 miles from the closest ready-mix plant, requires ready availability of quality concrete for construction of dam, power tunnel, intake and spillway structures, and two powerhouses. Available space for batching plants and aggregates storage at the river bank was limited. NOBLE-MOBILE, a compact, 100% complete plant, was driven to the site and put into operation at relatively low cost. Plant is used jointly by Jones and Tompkin, owner, and Guy F. Atkinson Co. Output is completely adequate for each contractor's needs; quality is consistent with the strict specifications of Bechtel Corp., engineers on the project; hauling distances are short . . . ranging from only a few yards to a maximum of 3 miles to the downstream powerhouse.

On this project the NOBLE-MOBILE is a wet mix operation with a Smith 112-S tilting mixer charging to Dumpcrete trucks. Erected cost is far less than a conventional stationary central mixing plant. 3", 1½" and ¾" aggregates and sand are charged by a conveyor fed by a front end loader. Present cement storage capacity of 1000 barrels (625 in plant, 375 in ground storage silo) is being increased to 3000 barrels with the addition of a second ground storage silo. Aggregate bin storage capacity is 100 tons.



Pre-stressed piling manufacture at bridge site with NOBLE-MOBILE saves costly 25 mile haul

In temporary set-up for manufacture of pre-stressed beams and pilings at construction of San Rafael-Richmond Bridge, California, NOBLE-MOBILE pays for itself from savings on erection and hauling. It is the fastest, most inexpensive batching plant to move in, set up, relocate.



Noble-Mobile above. Bridge photo at left.

2 plants in batch-electric project

NOBLE-MOBILE is driven to the job site and goes into production promptly

Produces dry batch, transit-mix or pre-mix for construction contractors, ready-mix producers or concrete products manufacturers. Aggregates may be loaded by crane, conveyor or scoop-loader. Bulk cement storage silo with truck or rail receiving hopper, unloading screw and vertical screw. Weighs aggregates and cement separately and simultaneously. Automatic or semi-automatic controls. No field wiring. Minimum erection cost. Purchase is easier to finance than stationary plant.

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CONCRETE
BATCHING PLANTS

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in Columbus, Ohio, I would like to correct the information you gave.

It will have 14 levels of parking, one below ground, the remaining 13 being lift-slab decks, erected on steel wide-flange columns boxed with plates. I believe that this will be a record number of lift-slab levels, although not the tallest lift-slab structure—due to the low height per story of 7 ft 2 in. Total height above grade will be 88 ft.

PAUL J. FORD
Tibbals-Crumley-Musson
Columbus, Ohio

EDITOR'S NOTE: In ENR Nov. 7 the building was described on p. 67 as 10 stories high and on p. 19 as 11 stories high. Applying Mr. Ford's correction and the usual practice of counting the ground floor as the first floor, we should have called it a 12 story garage with roof-top and basement parking.

Cornell Concurs

SIR—The faculty of the School of Civil Engineering at Cornell University were pleased with your article "Can Construction Be Taught in Colleges?" (ENR Nov. 7, p. 23). To have our effort to produce good civil engineers noticed by the prominent engineering magazines is a source of satisfaction to the Cornell staff.

We believe that our curriculum does give an excellent start to young men who enter the construction industry, an opinion supported by the excellent progress which some of our graduates are making in construction companies. It is not specialized, however, and we believe that it serves sanitary engineering, transportation engineering, hydraulic engineering, structural design and surveying fields equally well. Our five-year program permits an adequate basic education for each of the general divisions of the civil engineering profession.

Eleven years ago the civil engineering curriculum at Cornell was lengthened to five years. Our faculty members become more convinced every year that this move was consistent with the demands of our rapidly changing times. Because of it, our students are able to enter any of the principal fields of civil engineering and be immediately useful to the employers.

N. A. CHRISTENSEN
School of Civil Engineering
Cornell University
Ithaca, N. Y.

Questions Innovations

SIR—We were very much interested in the article "Small Waterworks Features Six Major Innovations" (ENR Oct. 31, p. 32). We believe that Mr. Riddick has done a most excellent job with the design of this plant. However, we wish to question two of the items which you list as innovations in this plant.

The use of calcite, or pulverized limestone, as an aid to coagulation has been practiced by ourselves and others for many years. We wish particularly to refer you to an article in the American Water Works Association JOURNAL for October, 1951, entitled "Improved Coagulation by the Use of Pulverized Limestone," by Spaulding, Lowe and Schmitt, concerning experimental work by the Army. In addition, our company has used pulverized limestone, as is described in the article, in our accelerator water treating plants both with alum and iron coagulants.

Another innovation which is mentioned in the article is that relating to the use of float operated batterfly valves as a filter rate of flow controller. We have done this quite frequently in the past, and I am sure others have also in connection with the design of small size gravity filter plants.

A. V. KALINSKE
Vice President and
Technical Director
Infilco Inc.
Tucson, Ariz.

CALENDAR

Highway Research Board, annual meeting, Sheraton-Park Hotel, Washington, D. C., Jan. 6-10.

National Association of Home Builders, annual meeting, Conrad Hilton Hotel, Chicago, Ill., Jan. 19-24.

American Road Builders Association, annual meeting, Sheraton-Park Hotel, Washington, D. C., Jan. 20-23.

Associated Equipment Distributors, annual meeting, Conrad Hilton Hotel, Chicago, Ill., Jan. 26-30.

American Society of Heating and Air-Conditioning Engineers, annual meeting, Penn-Sheraton Hotel, Pittsburgh, Pa., Jan. 27-29.

National Bituminous Concrete Association, annual convention, Flamingo Hotel, Las Vegas, Nev., Feb. 3-6.

National Society of Professional Engineers, spring meeting, Michigan State University, East Lansing, Mich., Feb. 13-15, 1958.

Association of Asphalt Paving Technologists, Sheraton-Mt. Royal Hotel, Montreal, Canada, Feb. 17-19.

American Concrete Institute, annual convention, Morrison Hotel, Chicago, Ill., Feb. 24-27.

American Congress on Surveying and Mapping-American Society of Photogrammetry, 1958 consecutive meetings and co-exhibit, Shoreham Hotel, Washington, D. C., Mar. 23-29.

New York State Association of Highway Engineers, 19th annual meeting, Manger Hotel, Rochester, N. Y., Mar. 26-28.

Purdue Industrial Waste Conference, 13th annual meeting, Purdue Memorial Union Building, Lafayette, Ind., May [illegible].

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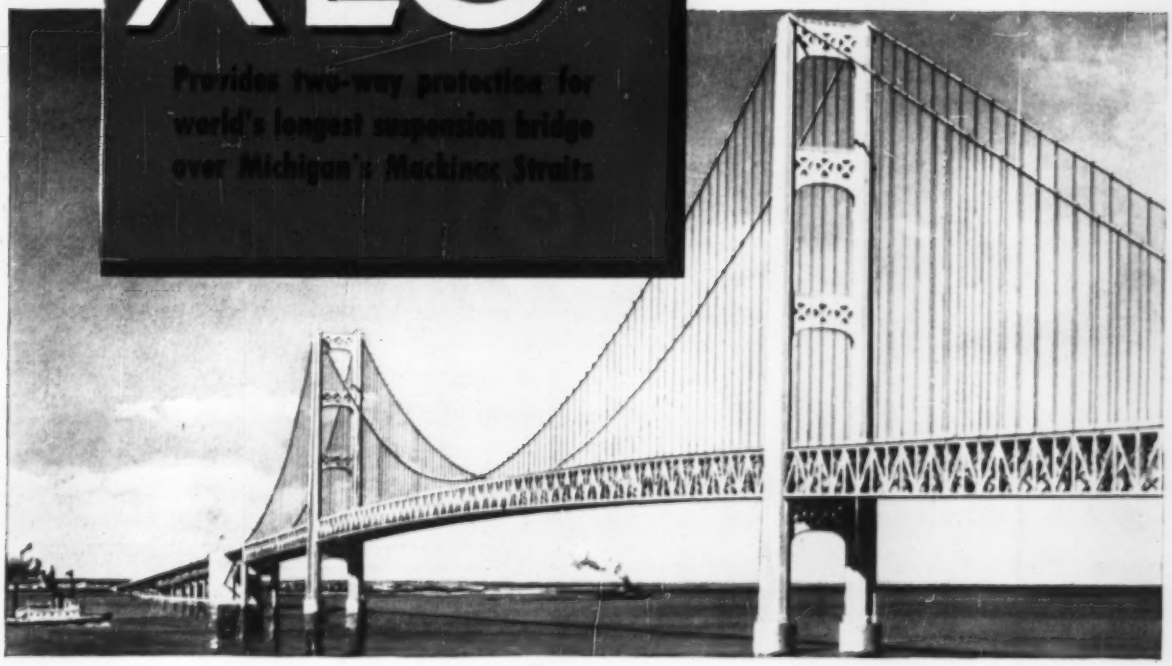

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2. Makes an excellent foundation for field painting

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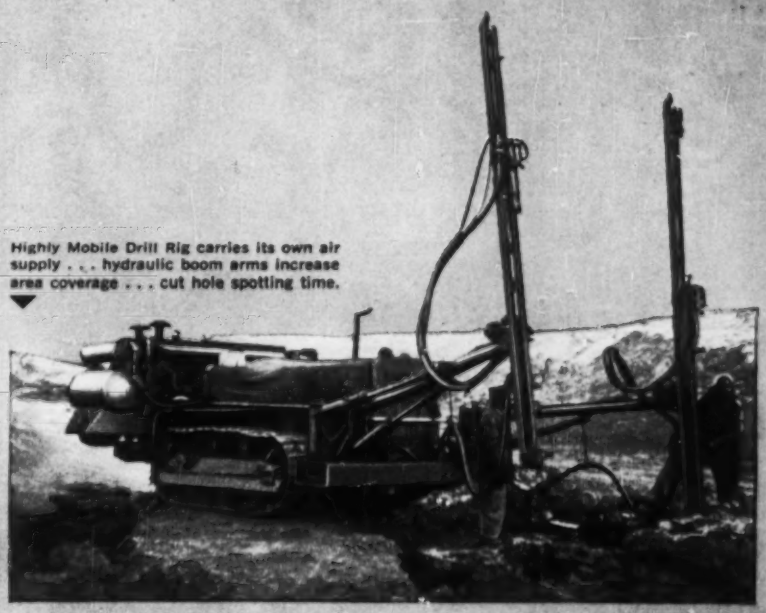

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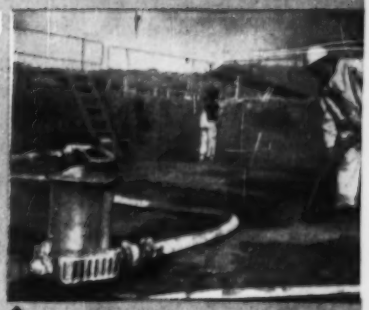

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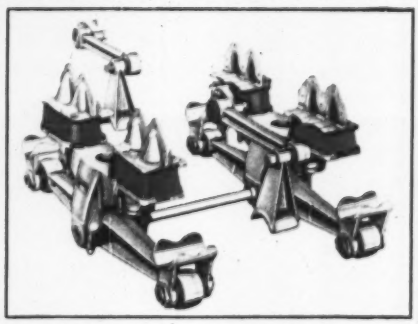
THE CONSTRUCTION WEEK

PIKE VS. FREE ROAD—Maine's Turnpike Commission and State Highway Commission are on opposite sides of the fence over the effect of the state's proposal to build an $18 million highway and bridge connection between Portland and Yarmouth. Pike commission officials—fearing that the improvement of a free highway would seriously hurt pike revenues—have asked the U.S. Bureau of Public Roads to delay firm obligation of funds for the Portland-Yarmouth work, at least until traffic studies are complete about February 20. The Highway Commission—pointing out that it is already under pressure from BPR because of slowness in getting interstate work under way—urged no delay in approval. Instead of hurting the pike, commission chairman David H. Stevens contended that the free road will add about 300 cars a day to turnpike volume.

PORT GROWS—Already riding the impetus of multi-million dollar plans of the Port of New York Authority (ENR June 6, p. 66) New York's port got another boost last week. The city's Board of Estimate approved pier leases to a Japanese and a U.S. Flag shipline that will set the stage for construction by the city of two piers in Brooklyn. The new piers are estimated to cost $14.2 million.

FOR ALL TO SEE—Even the prospective bidder now will become a matter of public record under a newly established policy of the California Department of Public Works. According to Director Frank B. Durkee, the department will henceforth "make public the names of contractors securing bona fide bid forms on departmental projects." This applies to "all construction work contracted for pursuant to the State Contract Act and, in addition, all equipment rentals entered into on a competitive basis." So any contractor now requesting a set of plans, specifications and bid forms will have his name put on record open to public inspection.

NIAGARA BRIGHTENS—New York State Power Authority this week appeared to be in the homestretch and pulling away in its race to secure an FPC license for the Niagara Power Project. FPC commissioners have agreed not to wait for its examiner's report, as demanded by PASNY, thereby speeding license granting time by 20 to 30 days. And this week a third opposing municipality was to consider joining two other municipalities that have withdrawn their opposition. Prospects for a mid-January license date are very likely now.



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WASHINGTON OBSERVER

- **Cities hopeful on federal grants**
- **Officials hopeful on lease-purchase**
- **Gaither report involves construction**

● **City officials think that the fight over continuation of federal grants for urban renewal projects is coming their way.** Earlier, it appeared that the budget-cutters inside the Administration might win their goal: a sharp slash in the whole program.

Their Washington sources now tell them that the program of capital grants will be kept around its present level—$250 million to $300 million per year. First public sign of the outcome will be in the President's messages in the next few weeks.

● **Federal officials now feel more hopeful about lease-purchase as a way of building some $700 million worth of government buildings.** After analyzing the first set of financing bids to come in since removal of the 4% ceiling on interest rates, they think the program may yet prove successful.

Here's the scoreboard so far: Two companies submitted acceptable financing bids on five of the 10 projects offered. Interest rates ran from 4.74% to 5% for terms of 10 to 25 years. A go-ahead on the five projects assured of financing now depends on whether contractors come in with construction bids on the projects. Bid openings come between January 22 and February 18.

The question now is: Will GSA's cost ceiling be too low and thus keep contractors away? The cost estimates were set 12 to 24 months ago; costs have risen significantly since then, of course.

A new round of financing bids will be asked next month covering eight new projects and the five from the first round that failed to get any bids. In addition, GSA is readying another 25 projects for financing bids.

● **A big boost for military construction would be certain following adoption of any part of the so-called Gaither report.** All told, the top-level committee of bankers, industrialists, educators, and retired military men would boost total military spending by an estimated $8 billion a year by 1960-61.

A rough guess is that such an increase would generate additional military construction of some $1 billion a year for missile bases, radar installations, airstrips, plus barracks and all the other facilities that inevitably must accompany expansion and dispersal of military installations.

Right now, you'd have to guess that some such new military spending program will be adopted to meet the Russian threat. The Democrats have been pushing steadily for more than the Administration has adopted.

The Gaither report also called for a huge five year program of building radiation shelters, to cost perhaps another $5 billion a year. But no one holds out hope that even the smallest beginning on this kind of construction will be approved soon. Even though the committee started out to study shelters—not overall defense—the group wound up putting shelter construction in a place of secondary importance. This conclusion is the one Washington has stuck with for years; not a dime has been voted for shelters in all the years since the Russians have had the A-bomb and H-bomb.

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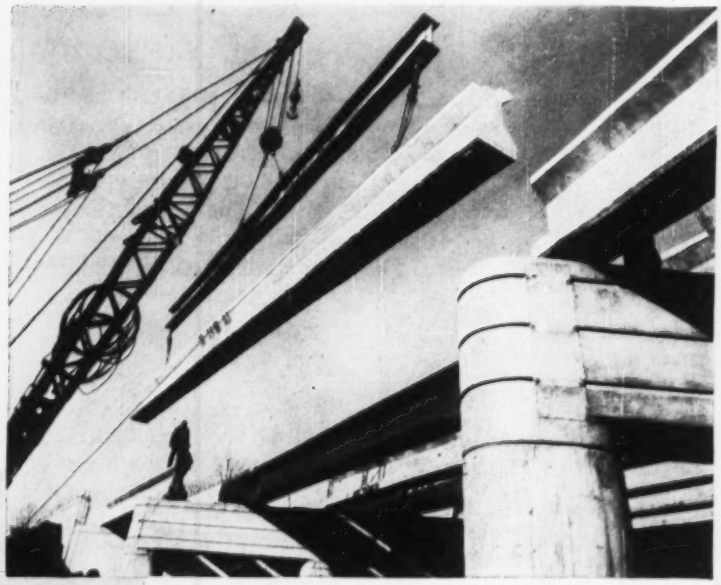

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NEW JERSEY HIGHWAY AUTHORITY

General Contractor:
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Prestressing Consultant:
CHARLES ZOLLMAN
Philadelphia, Pa.

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The '58 Congress and Construction

- Defense construction projects will get full support
- Public works budget items can expect tough sledding
- But the fact '58 is a Congressional election year may save some civil works projects despite the general shift in emphasis to matters of defense

Construction legislation may face rough going in Congress next session, wherever it is dependant on federal contributions. It appears now that because of the pressure to close the armament gap with the Russians, Congress is going to concentrate on defense and defense-connected expenditures, and push aside non-defense programs.

However, there is one ray of hope for those interested in getting through construction legislation that is not tied in directly with the defense program. That is the fact that 1958 is an election year and in such years members of Congress get suddenly conscious of doing things for the folks back home. This always helps public works projects, local projects, and any money for programs that will impress the voter that the Congressman is doing things for him.

As legislators get ready to move into the second session of the Democrat-controlled 85th Congress, here are the prospects for construction legislation:

Highways

Highway programs and legislation will get a lot of attention. The staff of the House Public Works Committee estimates it will devote more time to highway legislation during the session than to anything else. For one thing, the biennial bill for federal grant aid to the states to build primary and secondary roads will be up for consideration. At the same time, Congress will take a look at how the $27.8 billion interstate road program is moving along. Although the program has been slow in getting rolling, it is gathering momentum and economists foresee it beginning to give a shot in the arm to the faltering economy during the next six months. They point up a second impact, however, in the direction of inflation, should the program gain speed at about the same time increased defense spending hits the economy.

At recent hearings on federal spending conducted by the Joint Economic Committee, several economists pointed to the interstate highway program as a key place where the government could throttle down in order to provide more money for the defense effort. They indicated that the program could be postponed or slowed down in the event there is a squeeze on manpower and materials.

It was also recommended by some of the economists that the interstate program, now supported on a 90% federal-10% local ratio, be taken over completely by the federal government and in turn the state governments assume more or all of the cost of the primary and secondary road programs. There is little prospect, at present, that these programs will be so shifted.

Another controversial item that will occupy the public works committees is the anti-billboard legislation. The measure, pushed strongly by Sen. Richard Neuberger, would ban billboards along the rights-of-way of the interstate system. This measure lacked sufficient backing to pass last session, but support for it is growing.

Defense Construction

Military construction at bases both in the continental U.S. and abroad will have little trouble and Congress is almost sure to approve a larger figure than the $1.7 billion voted last year. The program is still in the formative stage, but there apears to be a good chance that a special bill will be sent to the Hill ahead of the regular bill to provide for so-called emergency construction at Air Force, SAC and missile bases. There is the likelihood that defense-minded Congressmen may sweeten this bill with money so that it may rival the regular bill in size.

A change in handling legislation on military housing will take place this session as result of legislation requiring all housing for military installations to be authorized in the annual military construction bill. Previously, several programs have come under the jurisdiction of the banking committees that have supervised legislation for the Capehart housing program—which calls for some 151,000 units to be financed by using housing allowances of servicemen to pay off the mortgage. According to the legislation worked out last session, every unit of military housing has to appear as a separate item in the annual military construction bill. Technically, this should cover Capehart housing, direct appropriation housing,.and "surplus commodity" housing, for bases abroad financed by the sale of surplus commodities.

Public Works

Public works projects will surely come under close scrutiny by the Administration, particularly in okaying money for them, but it is as equally certain such projects will get a lot of support among members of Congress. The biennial rivers and harbors and flood control bill, vetoed in 1956 by President Eisenhower on the grounds that some 40% of the projects had not been cleared by the Bureau of the Budget, will be up again. The $1.54 billion bill passed the Senate last year and is now before the House Rules Committee, which is in position to clear it for floor action in the House. The amount of projects that do not have Budget Bureau clearance has been reduced substantially and there is a good prospect that the bill will be passed without trouble and avoid a veto.

However, money for the Army Engineers to continue projects already authorized or those approved but not yet under way will be another question. The Budget Bureau already has put a ban on new starts and the word is that money for existing projects will be cut 20%. Congress, of course, will have an opportunity to raise the ante.

The hold down also will apply to reclamation projects. Even portions of the Administration-sponsored Upper Colorado River development project are scheduled to be delayed in difference to defense spending. Both the Navaho and Flaming Gorge dams, due to get construction money this year, have been deferred by the Administration who

——Here's What Congress Faces in '58——

Highways

The biennial bill authorizing funds for grants to states for construction of primary and secondary roads will be up and the interstate highway program is bound to become involved. There may be a move to get states to take on more or all of primary and secondary road financing in exchange for the federal government paying the entire bill on the interstate program. The anti-billboard bill will be up for airing, too.

Housing

There will be an omnibus bill that will involve more funds for extending the public housing program, more money for slum clearance and urban renewal, more secondary mortgage market money for Fannie Mae. Also there will be agitation to revive the VA loan guarantee program for World War II vets which died last year as result of pocket veto by President Eisenhower.

Military Construction

Prospects are that in addition to the annual bill there will be a special bill providing for construction in connection with dispersal of Strategic Air Command bases, and missile bases, all for Air Force only. Total for military construction sure to top last year's $1.7 billion.

School Construction

A school aid program is dead as far as last year's approach is concerned, but Administration and members already working on new program geared to the Sputnik age, putting accent on science scholarships, grants for construction of laboratory facilities and aid for work study programs. Also, programs for impacted area construction and maintenance grants are sure to be enlarged.

Public Works

The biennial rivers and harbors and flood control authorization vetoed by President Eisenhower two years ago will be taken up by House early in the session. Bill passed Senate last year, calling for $1.54 billion in new authorizations and is now before the House Rules Committee.

Bid-Shopping

The perennial bill prescribing policy and procedures in construction contracts will be taken up by the Senate early this session. It was passed by the House last year.

Reclamation

The fight over whether power facilities for the $225 million Trinity River Dam will be built by public money or private funds will get under way early. Pacific Gas & Electric wants to build the $55 million power facilities and pay the federal government $4.5 million a year for 50 years for privilege of developing and marketing the power. The $230 million San Luis irrigation project in northern California will be up this session but will have to clear the economy barrier for non-defense projects.

Hell's Canyon, virtually a dead issue although authorized by the Senate last year, will be taken up by House Interior Committee February 1.

Lease Purchase

Bill to extend program for five years at cost of $1.5 billion was passed by the Senate last year, but amended in House committee so as to end program, is sure to be brought up this session.

will ask for no money for fiscal 1959 for them. This will set off a fight in Congress among reclamation-conscious Congressmen.

New authorizations for reclamation will face hard going, too. Nevertheless, Rep. Clair Engle, chairman of the House Interior Committee, plans to bring up legislation calling for $230 million in authorization for the San Luis irrigation project in northern California.

Another fight that Congressman Engle is heading into is one over who will develop the power facilities at the Trinity River Dam, now under construction in northern California. The Pacific Gas & Electric Co. has offered to install the $55 million power generating facilities and pay the government $4.5 million a year for 50 years in turn for right to develop and sell power from the $225 million project.

Congressman Engle, who is opposed to the proposal, claims that the federal government will have to turn around and buy power back from PG&E to service its commitments in the Central Valley Project. While the Administration is budgeting funds for the continuation of construction of the Trinity project, it is sure to favor power development by PG&E rather than by the federal government—in a partnership arrangement.

The highly controversial Hell's Canyon bill, passed by the Senate last session, will be taken up by the House Interior Committee on February 1. This is a last gasp effort on the part of sponsors and if defeated will put an end to serious attempts to authorize the controversial site on the Snake River. The Idaho Power Co. is well along on construction of two dams on the Snake River and one of them—Brownlee Dam—is due to be completed during calendar 1958.

School Construction

School construction legislation, providing for federal aid for construction grants, is rated as a dead issue. In its place will be a strong push for accelerated scientific and technical training. Congress will be flooded with proposals for science scholarships, construction aid for science laboratories in high schools, and perhaps money for studies of curricula. Since the general construction aid bill appears dead, chances are that an effort will be made to enlarge the program for grants for impacted areas—areas that lose tax revenue because of the presence of federal installations.

There are two programs at present in this area, one for construction grants and the other for maintenance and operations. Both are almost sure to be enlarged.

Housing

There will be an omnibus housing bill to wrap up all money authorization and legislation required to extend housing-aid programs. The most controversial segment of it is almost sure to be the public housing section.

Two years ago Congress approved 35,000 starts a year for two years. However, the way legislation was written, each 35,000 authorization has two years to run. The Administration will fight to ban any new authorizations, while public housing advocates will seek to boost the annual figures. There also is sure to be a fight over the amount of money for slum clearance and urban renewal. The $350 million approved for the current program was held down to $175 million by the Budget Bureau, but proponents are sure to ask for an annual appropriation of some $250 million.

Congress also will have to vote new money for Fannie Mae for secondary loans and its other special programs, for which Congress voted $1.25 billion last year. This program includes special assistance for cooperative housing, for minority groups, and for the aged.

An Administration proposal that is sure to run into a storm on the Hill will be one by Housing Administrator Albert Cole to guarantee the top 20% of conventional housing loans. There would be no limitation on the interest rate, or the size of the total loan. Also, Congress is going to want more protection for the buyer of the house. The Cole proposal would enable the buyer to get an 80% or 90% loan in place of the 60% or 70% conventional loans being made by banks and private lending institutions today.

Labor

On the labor front, the Taft-Hartley labor law will be up for revision next session due primarily to the pressure to clean up labor unions and make it more difficult, if not impossible, for corrupt elements to gain control of labor unions. Once the Congressional committees begin looking at the 10-year-old labor-management act, Labor Secretary James Mitchell will push for a package of amendments, including a number affecting construction.

On employee welfare and pensions plans, Secretary Mitchell wants registration, reporting and public disclosure of operations of all health, welfare and pension plans, whether union financed, employer financed or jointly financed and controlled.

The filing of annual financial reports from all labor groups, local, national and international, plus state regional and local conferences and councils, with the Labor Department will be pushed.

Conflict of interest will be carefully watched to secure reports on payments made by employers to employee representatives, either directly or through a third party. Further, Mr. Mitchell wants to require labor organizations and officers annually to report financial dealings with employers.

Secretary Mitchell would amend the Criminal Code to make a felony for employers or employers' representatives or union officials or their representatives to make or receive payments to influence the actions of either.

Secondary boycott provisions would be amended by Secretary Mitchell to permit picketing on construction projects. But Mr. Mitchell would eliminate "hot cargo" provisions under which workers on construction projects can refuse to handle goods manufactured or sold by non-union concerns.

He also will seek to give authority to the National Labor Relations Board to certify building and construction trades unions as bargaining representatives, without prior elections.

Also, Mr. Mitchell wants to amend the law so as to permit employer payments to apprenticeship and training trust funds. Previous moves ran into legal barriers.

Atomic Power

Atomic power legislation will benefit by the arms build-up and the construction program in general will have clear sailing. However, there still is friction between the leaders of the Joint Atomic Committee and AEC Chairman Lewis Strauss over the reactor program. In an effort to smooth out differences so that there might be some meeting of the mind on the atomic legislative program the members of the Joint Committee and the AEC board members met this week.

But it was an almost foregone conclusion that they would not get together on the power reactor program. A Congressional group will push for a federal development program, while Mr. Strauss is certain to insist that reactors can be built by private industry as in the case of the Shippingport, Pa., project which began serving the Pittsburgh area this week.

Stress on Science Irks Artsmen

A second round of conferences on engineer and scientist utilization was started last week by the President's Committee on Scientists and Engineers, meeting at the University of Missouri, Columbia. And apparently, the conferees were in a hotbed of liberal artsmen.

A poorly attended two-day conference was held amid reaction to current stress on scientific training.

Howard L. Bevis, chairman at the President's committee, pointed to the Soviet challenge, saying:

"America's response must be marshalling of our brainpower resources in company with other nations to meet the broader challenges of the scientific age we have entered."

But the Bevis plea was preceded by these rumblings on the Missouri University campus in the days leading up to the conference:

• The Missouri State Teachers Association, battling for a larger share of the tax dollar for elementary and high schools, pointed out it was absurd to think that a child from an inferior elementary school would develop great interest in science or mathematics; that a child who was not taught how to read well cannot be expected to excel in science, or anything else.

• Frank McCleur, president of Lindenwood College at St. Charles, Mo., averred that the "great upsurge in scientific development can endanger the free world unless at least matched and guided by liberal thought."

• Elmer Ellis, president of the University of Missouri, said, "we are all agreed to the need for emphasis on scientific education—but we are agreed, too, on the need to expend great effort to teach all peoples the Christian way of life."

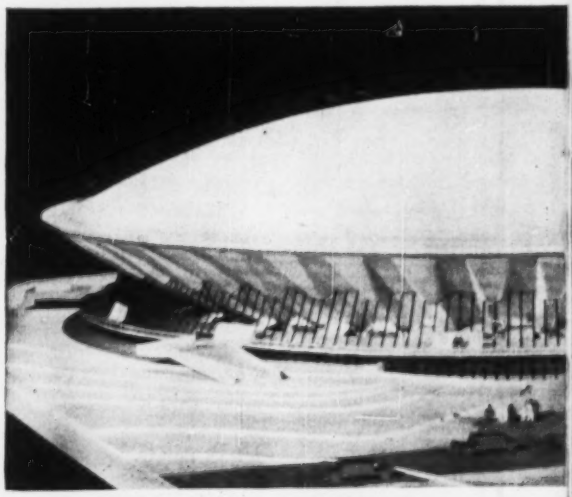
W. E. Kemp, three-times mayor of Kansas City, Mo., said that "if mad competition in nuclear weapons and armament is ended, settlement most likely will come, not from skilled technologists, but from men and women deeply grounded in liberal arts. They are better able to see and analyze the problem in all its complicated aspects."

Paul H. Robbins, executive secretary of the National Society of Professional Engineers, outlined the area for the Missouri conference by declaring it was irrelevant to discuss whether there is a shortage of engineers.

"We know there is an increasing need for men and women trained in engineering and science," he said. "The purpose of this conference is to explore ways we can more adequately use the brainpower we have available," Mr. Robbins pointed out.

Most of the methods discussed were the usual suggestions for relieving scientists and engineers of non-technical chores to let them get on with their engineering and scientific work.

After its current series of local, state and regional conferences, the President's committee plans a national conference on utilization of scientists and engineers.

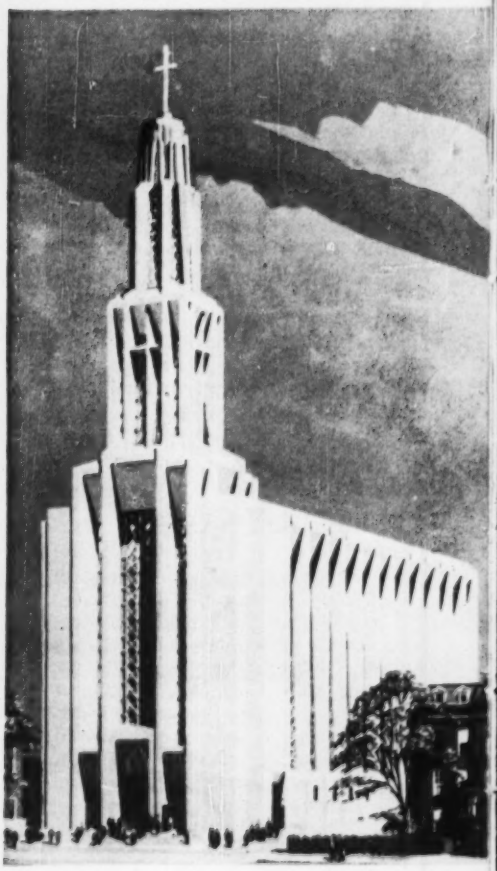


Athletic Bowl Comes With Lid

Athletic bowls usually don't look like bowls from the outside, but the University of Illinois plans to take bids next summer on a $7½ million stadium that will. Designed by the New York firms of Harrison & Abramovitz, architects, and Ammann & Whitney, structural engineers, it will be 400 ft in diameter and will hold 18,000 persons. A post-tensioned concrete ring girder will be about 44 ft above grade and 69 ft above the arena floor. Walls, which slope about 25 deg above horizontal, will be reinforced concrete folded-plate type. The roof dome will be either reinforced concrete or steel-framed, with a rise of 45 ft.

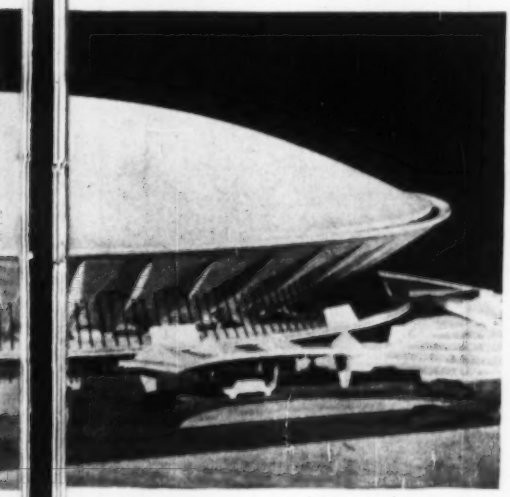
Lift-Slab Record Breaker Planned

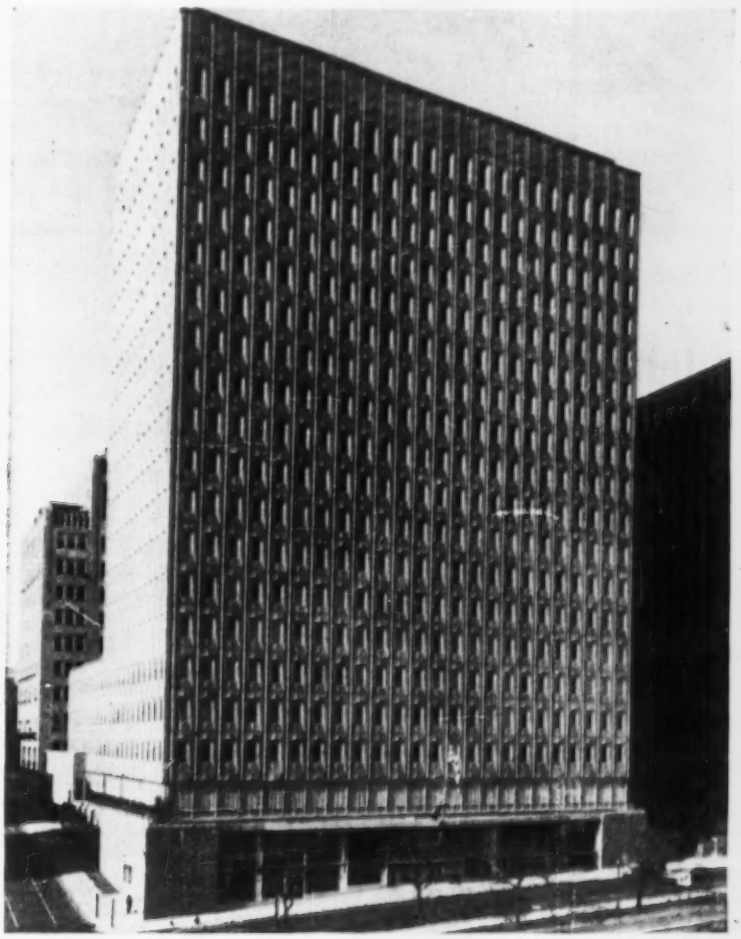
A Florida firm plans to start construction next month on the world's tallest lift-slab building, a 14 story $1½ million cooperative apartment house in Hallandale. It will be 160 ft high, with 14 lifted slabs, each 6 in. thick. The tallest existing building erected by the lift-slab method is a 101 ft high Mexico City apartment house (ENR Nov. 7, p. 67). Designed by Joseph Vladeck & Abraben of Miami Beach, the new building will be constructed by S. A. Spiller, of Miami Beach, with Lift-Slab of Florida, Inc., handling the lift-slab operation.



To Replace Burned Church

The Roman Catholic Archdiocese of Hartford, Conn., will start work next year on a new $15 million archdiocesan cathedral to replace St. Joseph's, which burned last New Year's eve. Eggers & Higgins made the new design. George A. Fuller Co. will erect the building.





Paneled Skyscraper

The 20 story, air-conditioned, Commercial Credit Building, just completed in downtown Baltimore, is faced with aluminum panels 7 ft wide by 12 ft high and ¼ in. thick. The building has a bolted structural steel frame.

The interior features soundproofed ceilings, walls, doors and partitions, movable steel wall-panel sections, and a vertical conveyor system.

Harrison and Abramovitz were the architects and Consolidated Engineering Co. was the general contractor.

Sand Dunes Studied As Water Source

Four test wells in the coastal sand dunes stretching 10 miles north of Coos Bay, Ore., are delivering fresh water in excess of 1.5 mgd. The Pacific Power and Light Co. is investigating a 13,000 acre formation of water retaining sands to determine if a reliable supply of fresh water for industrial needs can be developed from the unusual geological formation so close to the sea.

Among the first Americans (four journalists) allowed to drive their cars into Russia as ordinary—or extraordinary — tourists, ENGINEERING NEWS-RECORD's Bill Coughlin made the trip from London to Moscow and back without untoward incident. With him were his wife, two children and a photographer. He was supplied with a Russian interpreter. He took photographs at will. He found the people friendly. But he found many startling contrasts between the Russia which the Russians know and the one that spawned the Sputniks. Soviet homes and their halls of science are in entirely different worlds. This article is Bill Coughlin's report of what he saw of Russia's successes and failures in the field of construction.

I drove to Moscow for . . .

The Inside Story on Soviet Construction

William J. Coughlin, Chief
London Bureau
McGraw-Hill World News

From the moment you drive across the Polish frontier into Russia, you can sense the enormous construction boom under way in the Soviet Union.

The bridges spanning the Bug River between Poland and Russia are symbolic of the contrast between old and new that lies ahead. To one side is the ancient wooden bridge that formerly carried traffic between the two countries, a sagging framework whose red-and-white wooden barrier now is closed permanently to the occasional traveler on this little-used route.

The new bridge that confronts you is a two-lane cobblestone structure with iron railings set in concrete posts. Five modernistic street lamps are placed at intervals down each side of its 100 yd length.

It is equally symbolic that bulbs in two of the lamps are burned out and that three Russian soldiers are fishing through a crack that has appeared in the center of the new bridge. For Russian construction today is a strange blend of modern effort with imperfect result.

• **Impressive but poor**—New buildings and structures are going up in the Soviet Union which begin to crack and weather even before they are completed. It's odd in view of the tremendous emphasis the Russians are putting on construction that they have not yet mastered modern building and design.

Typical is the hotel which you find in Minsk, an industrial city some 400 miles west of the Soviet capital and half a day's drive from the Polish border. Its appearance indicates it might date back to Czarist days. But the hotel is, in fact, brand new, and one wing still is under construction.

Yet the walls and ceilings of your old-fashioned hotel suite already are cracking. The exterior of the building looks as if it had weathered for years. The worst feature of the accommodations is its dank, windowless bathroom. The plumbing is exterior, staining the walls, and the floor is of large uneven tiles with a rusty drain set in a rough patch of concrete.

The water you shave with has to be brought up from the kitchen because the hotel boilers have broken down.

• **Shocking contrast**—Yet the nation that put up this hotel is the same one that fires Sputniks into space, builds intercontinental ballistic missiles, produces its own H-bomb and jet airliners, and has, in general, a very highly developed technology. What's the answer?

One is that in the Soviet scheme of things, hotels are of secondary importance. But perhaps another can be found in the field of aviation. When the sleek new Soviet TU-104 jet airliner first made its appearance in the West, it sported a Victorian interior of antimacassars and cut-glass flower vases that would have been a perfect match for one of the mansions gracing San Francisco's Nob Hill before the 1906 earthquake.

Following considerable comment in the Western press on this archaic touch, the Soviet designers quickly replaced the dated interior with one entirely in keeping with modern airline design. Since their new buildings can't fly, Soviet architects and builders are denied the Western criticism which benefited their aviation comrades.

It's too bad. For with the Soviet government embarked on a vast nationwide construction effort—re-building war-torn cities, widening avenues for the increasing motor traffic, building large factories to keep up with industrial growth—Soviet architects could have brought to the face of Russia the modernistic look of Sao Paulo, Mexico City or Los Angeles. The opportunity already is lost. The new Russia, in appearance, will be Victorian at its grimmest and most depressing.

(*Continued on page 28*)

Photos by Guido Organschi

APARTMENT BUILDINGS are going up on the southern edge of Moscow. This will be a new district covering 25 city blocks.

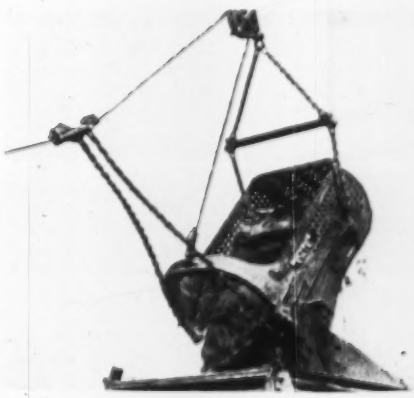
Make your dragline "BIGGER" with a new-design Bucyrus-Erie bucket

This new-design, 2½-yd. Bucyrus-Erie bucket is swung by a 38-B dragline working on extension of a four-lane highway near Platteville, Ohio.

You can add to the efficiency of your dragline — in effect make it *bigger* in performance by swinging an all-new Bucyrus-Erie bucket. New design concepts, plus use of a special alloy, give these buckets extra output possibilities. Weight is balanced so that teeth and thin "slicing-action" lip penetrate rapidly for fast, full loading. Material flows smoothly into the tapered basket. Bucket carries with a minimum of bobbing and spilling — the result of proper flaring and balance. Dumping is clean and fast because of smooth inside design and high arch.

BECOLOY, the special alloy from which Bucyrus-Erie buckets are made, is extra tough to resist impact, shock and wear so that thinner sections can be used for building lightweight buckets. It can be cut with an acetylene torch and welded rapidly with only moderate pre-heat for easy field maintenance.

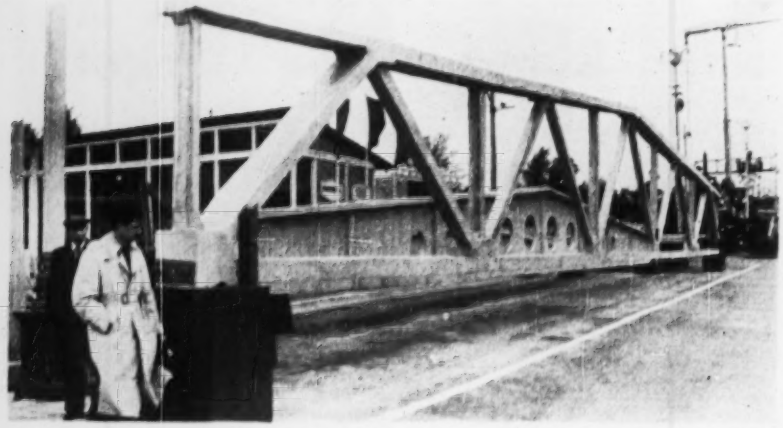
There are Bucyrus-Erie buckets in a wide range of sizes — for light, medium or heavy duty — with solid or perforated baskets. Your Bucyrus-Erie distributor will be glad to help you choose the one to get the best performance from your dragline. 74B57



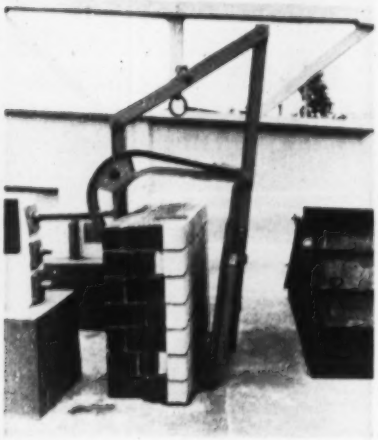
BUCYRUS ERIE

A Familiar Sign at Scenes of Progress

BUCYRUS-ERIE COMPANY • SOUTH MILWAUKEE, WISCONSIN



THE AUTHOR passes a 100-ft-long concrete roof truss on display at a Moscow building exposition. The truss is composed of five sections which are bolted together.



PREFAB BRICK UNIT weighs about 330 lb. Lifting device is shown with it.

• **No Russian Wright**—If there is a Russian Frank Lloyd Wright, he has been drowned in the flood of what someone aptly has called "power station architecture"—an apt description if some of the world's fine modern stations are excluded from the comparison. For, it's more than a joke that whether a Russian sets out to design a hotel, a block of flats or an office building, it winds up looking like a power plant.

Yet Russian construction is impressive from the sheer scope of the program and the vigor with which it is being carried out. The amount of construction in progress is breathtaking.

The skyline of Moscow itself is dotted with giant erection cranes. You can stop the car at one point near Moscow University and count more than 75 of these.

Between Vnukovo Airport and the southern edge of the city, an entire new district covering 25 city blocks is under construction. More than 21 million sq ft of living space is planned there. Piles already are being driven into the Moscow River for the double-decker bridge which will link this new suburb with the rest of the city. Newly completed blocks of flats can be seen elsewhere in the city and many more are being erected.

The reason for this housing activity is obvious. The Russians make no attempt to hide the Moscow slums. Your interpreter, whose salary puts him in a lower middle class income bracket, is pleased that he, his wife and three children do not have to share with another family the single room in which they live.

• **Moscow's building boom**—The Russians are quick to supply statistics on the building boom. By 1960, Moscow's living space is to increase by over 120 million sq ft, or another 4,000 apartment houses. Construction already has started on 1,500 of these. It's reported that housing with a floor space of more than 14.6 million sq ft was erected in the first ten months of 1957.

Moscow at present covers 138 sq mi. Ten to 15 years from now, it is to cover 232 sq mi. There are plans for satellite towns about 30 miles outside the capital, for new subway lines and a 65 mile ring road. Buildings planned or under construction include hotels, department stores, theaters and cinemas. In the next three years, 162 schools are to be erected in the capital.

The work already completed is so impressive, yet the first impression is to find that the terminal building at Vnukovo Airport is one of the shabbiest in the world.

• **Peasant-power**—There are other touches to remind you that this new industrial nation still isn't far removed from its peasant beginnings. You see women carrying hods of bricks high on the scaffolding of new buildings, and at work on the roads. In small farm communities, the buildings going up to ease the housing shortage are log cabins.

More than matching the effort on the housing front is construction activity elsewhere. The Kuibyshev hydroelectric station built across the Volga in the Zhiguli hills has just been completed. The largest in the world, it will be topped next year by the Stalingrad station which is still under construction. Two years later, new power stations on the Angara and Yenisei Rivers in Siberia will dwarf both these (ENR Dec. 12, p. 26).

The Russian atomic power program calls for building huge power stations whose capacities will add up to as much as 2.5 million kw. Construction has started on the first of these.

More than 32,000 large factories have been built since 1917. There are 69,000 mi of new railway lines and a third trans-Siberian railway now is under construction, with the first 100 mile stretch being laid near Omsk.

• **Poor roads**—Missing from all this is any indication of vast highway program. The scarcity of automobiles has relieved the planners of any need for modern freeways.

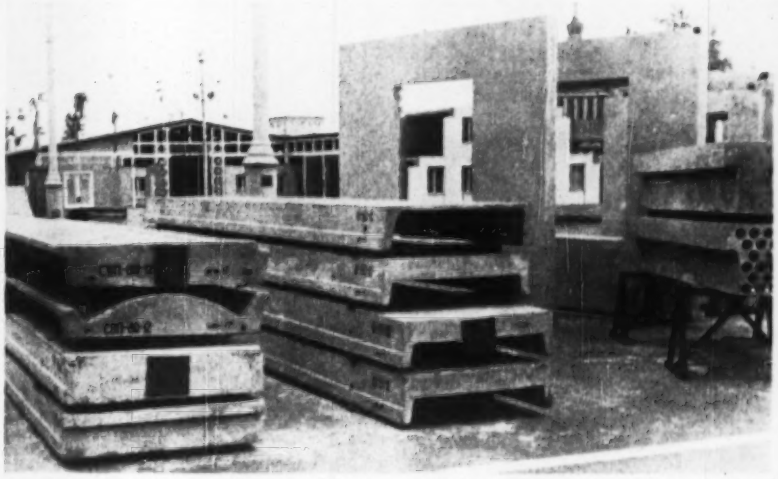
As a result, Russian highways are adequate, but far below the standards of either the U.S. or Western Europe. Since traffic between cities is almost exclusively trucks and buses, the poorly laid road surfaces frequently are undulating and cracked at the edges. There are no shoulders. If you are driving a modern car, 60 mph is about as fast as you want to travel or you risk going through the roof.

Both asphalt and concrete are used. At the industrial exhibition outside Moscow, you can see prefabricated concrete road sections, designed to be laid on a sand or gravel base, but you can drive 1,500 miles on Russian highways without seeing any more of these.

The two-lane highway to Minsk from the Polish border is lined with willow and maple trees and propaganda billboards. Before leaving Brest Litovsk, you stop at the "petrol pump station" on the eastern edge of town. It consists of a rusty pump set in the center of a large dirt corral. Here, your tank is filled with what the Russians say is 74 octane gasoline. Its performance indicates it is less.

Between Brest Litovsk and Moscow, a distance of some 700 miles, there are only seven stations where this "high" octane gasoline is available. Some of these, you find, are poor imitations of U.S.-style service stations and the rest resemble the first one.

The road from Brest Litovsk runs first through flat farmland. After passing through the village of Kobrin, 30



PREFABRICATED CONCRETE production in the Soviet Union has more than doubled from 1956 to 1957. These sections are samples on display at the permanent exhibition.

STRAW, WOOD AND BRICK are used in building where other materials are scarce.

miles east of the Polish border, it begins to climb slightly and the farmland alternates with pine forests.

There are few curves, and road construction across the flat Byelo-Russian plain obviously offered little difficulty from an engineering viewpoint. This is the classic invasion route which both Napoleon and Hitler followed to Moscow. Traces of the road built by Catherine the Great still can be seen.

• **Prestressed bridges**—In places, fill supports the highway across marshland; in others, prestressed concrete bridges carry it across narrow rivers. Prestressed concrete also is used where overpasses carry side roads across the main route as it dips through deep cuts.

Beyond the overnight stop at Minsk, the highway broadens from two to three unmarked lanes. Your international road map indicates the road from here to Smolensk to Moscow is a freeway comparable to the German autobahn. Whoever drew the map has never seen the road.

It is a constantly billowing asphalt surface freely used by farm animals. During the harvest season, the collective farms use it for drying wheat, hay and barley; frequently, you pass peasant women raking and winnowing the grain on the highway, reducing it to a single usable lane.

Some of the side roads running off the main highway are asphalt-surfaced, others are dirt. A deliberate detour indicates this pattern continues in the back country off the main highway.

• **Reconstruction**—After 185 miles, you turn off the highway to Smolensk, 4½ miles from the main road. This ancient, walled city is older than Russia itself. Built on a hill near the Dnieper River, it rises abruptly from the plain. Its strategic importance is evident, and it is here you realize for the first time the enormous burden of reconstruction the war placed on Russia.

Napoleon and the Russian armies under Barclay de Tolly fought a costly battle at Smolensk in 1812, the encircled city falling only when it was afire, and it was here that the Russians held up Hitler's advance for almost a full, critical month in 1941.

The city shows its history. It is battered and muddy. But when, in the blue evening light, your car bumps down the torn streets, clatters across a wooden bridge that is being rebuilt, and climbs slowly up the narrow main street behind a tramcar, past the ancient wall and the onion domes of the cathedral, you suddenly succumb to its charm. San Francisco, in its early days when it was rebuilding from fire after fire, must have been much like Smolensk, which oddly has the same spirit of a Western frontier town. Smolensk still is rebuilding, but it has a long way to go.

• **Prefabrication**—For the construction-minded visitor to Moscow, 234 miles beyond Smolensk, there is a building exhibition where you can see the approach being made to the housing shortage. Here, the emphasis is on the use of prefabricated concrete sections for homes and apartment buildings.

A sample two story apartment house on display has no framework. Its floor is made up of lightweight flooring units between interior walls and heavier flooring units between structural walls. The wall units are holed for ventilation piping and incinerator chutes. There are integral heating panels with glass piping embedded in the concrete to carry hot water heat. Prefabricated plumbing units are provided for kitchens and bathrooms. This design can be erected as high as five stories, it's said.

You are told that a two-bedroom concrete house costs 40,000 rubles. That's $4,000 at a fairly realistic exchange rate of 10-to-1. But it represents considerably more in relation to the buying power of the average Russian worker.

Other prefab concrete units displayed include a huge ten-section tunnel unit for subway construction and a reinforced concrete roof truss almost 100 ft in length, made up of five individual 20-ft sections bolted together.

Production of prefabricated concrete units in the Soviet Union has expanded from 125,000 cu yd in 1956 to 260,000 in 1957, according to the latest Russian figures.

In the remoter areas of the Soviet Union—the so-called "virgin lands" of Siberia—natural materials are being used in construction of new towns for the settlers. Immense quantities of reeds grow in these areas, and the Russians have developed a machine for binding and cutting them into usable wall panels. These are wired to a brick exterior and then covered with plaster on the interior side for a three-ply insulated wall supported by a wood frame.

You comment to your interpreter that the Russians have gone the Three Little Pigs one better in using straw, wood and brick for the same house. He finds this hilarious. "Please to say that in your article," he begs you.

After driving back across the 700 miles between Moscow and the Polish frontier, you leave the Soviet Union with the feeling that you've been witness to one of the world's greatest engineering and construction efforts. Regardless of cost, either human or financial, the task of remaking the face of the USSR is moving ponderously forward. There are gaps in Soviet knowledge of construction methods, but in the tremendous building boom now under way, the Russians should learn from experience—like the Three Little Pigs.

"We have excavated lengths of Transite after 20 years of service and have found no sign of tuberculation..."

says Consulting Engineer
Leigh O. Gardner
Yost and Gardner, Engineers
Phoenix, Arizona

"Transite has many advantages contributing to its economy. Its light weight, handleability and easy-to-join Ring-Tite Coupling keep our clients' final costs low. We find a continuing economy of operation throughout its long life. We have excavated lengths of Transite after 20 years of service and have found no sign of tuberculation . . . the smooth inside walls proving it still has low coefficient of friction and therefore highest carrying capacity."

Early installation photograph, Tucson, Arizona, where Transite has served since 1934. Still factory-smooth, these Transite water mains will contribute to pumping economy for many years to come.

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Photo by Ray Manley, Tucson

Crews of F. J. Gallagher Trenching Co. installing 14" line in Tucson, Arizona

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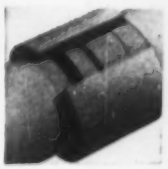

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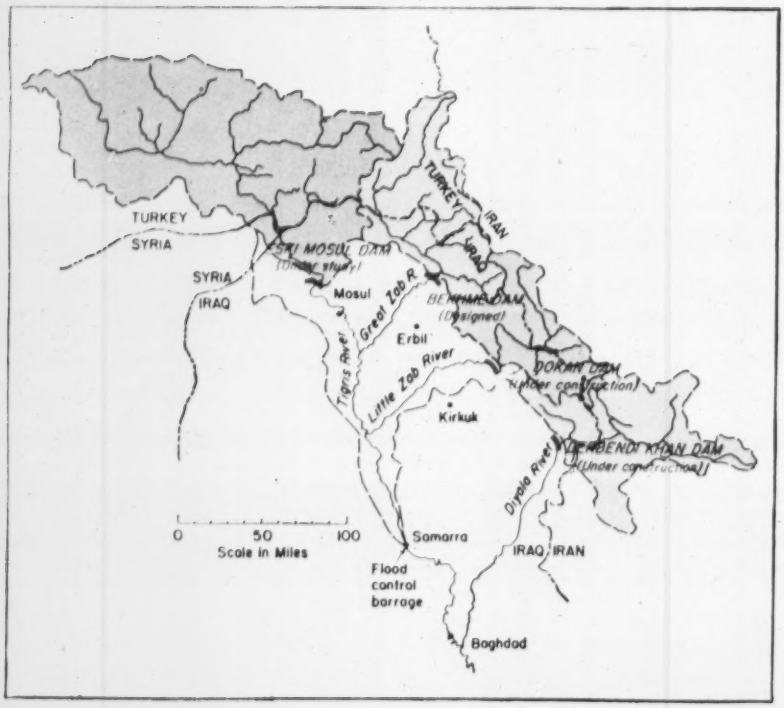
JOHNS-MANVILLE

Big Dams

Waldo G. Bowman, Editor
Engineering News-Record

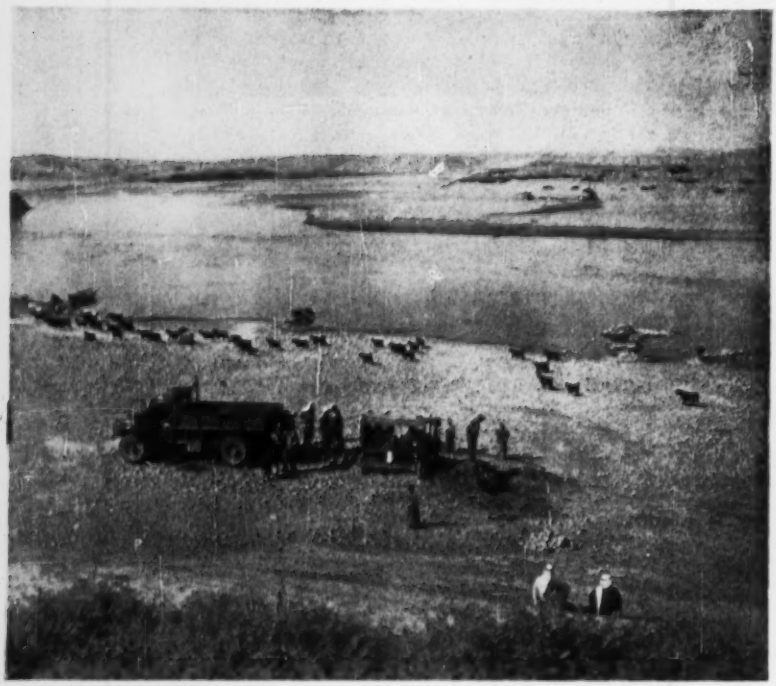
FOUR DAMS in the upper reaches of the Tigris and its tributaries would intercept the bulk of the water that now flows to the Baghdad region, and store it for beneficial use. Two of them are now under construction.



The great development program that Iraq is undertaking in an effort to mold a modern Mesopotamia (ENR Dec. 12, p. 34) derives a special element of interest from the historical setting in which it is being staged. And the dam-building part of the program is particularly responsive to historical perspective because Nebuchadnezzar's Babylonia of 2,500 years ago had no dams—at least none worthy of the name.

As a consequence, its lush countryside, fed through a remarkable system of irrigation canals with the water of the Tigris and Euphrates rivers, was periodically devastated by their floods, annually troubled by low summer flows. Had the contractors, who built the Tower of Babel and the famous Hanging Gardens, constructed dams instead, the prosperous empire might have lasted longer than it did.

The new Babylonia, now being created, is concentrating on dams instead of Hanging Gardens, although in the end it may have both since the oil, so fortuitously found under its deserts and date groves, is providing more revenue than Nebuchadnezzar could have dreamed of. In any event, dambuilding is in full swing as a key



FOUNDATION INVESTIGATION on the banks of the upper Euphrates where Eski Mosul Dam is planned. Of earthfill type it would require a 37 million cu yd embankment.

BEKHME DAM would look like this if designs already completed are carried out.

Instead of Hanging Gardens

operation in Iraq's drive to recapture something of its long lost agriculture-based economy, and the progress to date is worth recording.

Now that two barrages have been completed across the middle Tigris and Euphrates to control the worst floods in their lower reaches, attention has shifted to the upper Tigris and its tributaries where storage dams are needed to conserve irrigation water while adding sensibly to the degree of flood protection already achieved. Three of these dams are designed, two of them are under construction and a fourth is being studied actively.

The locations of these four dams and their respective drainage areas on the Tigris and its tributaries are shown on the accompanying map. In total, this drainage would come from 37,000 sq miles and, in amount, would add up to 33 million acre-ft. This is the bulk of the water that the Tigris now brings into the Baghdad area, and in whose way now stands only the flood diversion works at Samarra, which make no contribution to conservation for irrigation.

The importance in this scheme of things of the proposed Eski Mosul Dam is evident from the fact that both its drainage area and runoff account for about half of the totals noted above. Eski Mosul would be on the main stem of the Tigris, and the site, now being core-drilled by Harza Engineering Co., Chicago, is about 25 miles upstream from the city of Mosul. The underlying material is gypsum, which is considered satisfactory for the dam foundation so long as water does not penetrate it at sufficient velocities to wash out cavities. To prevent this, an extensive grouting operation is forseen.

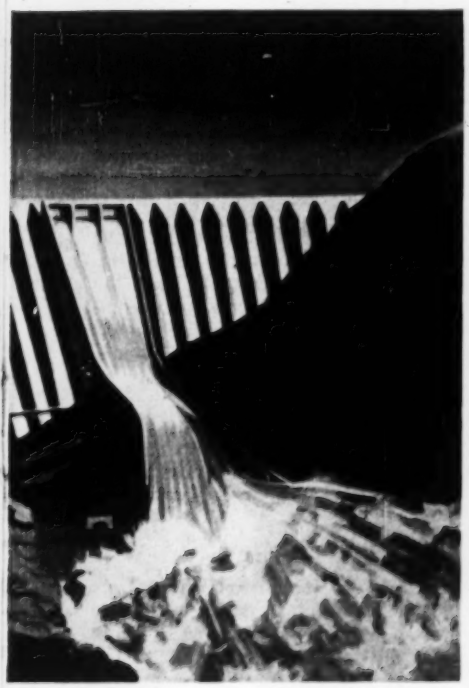
The dam being considered for Eski Mosul would be an earth and gravel fill, with a concrete spillway through the left abutment. It would be about 1.2 miles long and require 37 million cu yd of fill and 3.2 million cu yd of concrete. Under the best of circumstances the dam could not be started before 1960, which would place its completion date in 1965.

Although the Eski Mosul reservoir would exercise some flood control effect, the water would be used principally for irrigation in the adjacent upland region where dry farming and pasturing are now practiced. The Kuljian Corp., Philadelphia, is studying the irrigation phase of the work. Its studies have also brought out that there are at least two projects—of 60,000 and 24,000 acres—which can be irrigated without benefit of the dam merely by installing gated takeoffs in the river bank.

Bekhme Dam on the Greater Zab River, which would control about 25% of the total runoff of the upper Tigris system, would be of massive buttress type, 613 ft high and 2,700 ft long at the crest, as already designed by the Harza company. However, its construction has been postponed for further studies of the benefits of its 6 million acre-ft reservoir compared to Eski Mosul, and particularly to what the two dams now under construction—Derbendi Khan and Dokan—would provide. Together, these latter two dams will control the remaining 25% of the runoff, and Derbendi Khan has the additional advantage of providing flood control on one of the two main tributaries of the Tigris which do not join the main stream above the flood control works at Samarra.

• **Big rockfill**—Derbendi Khan was put out for bids in alternate designs of a concrete gravity structure and a rockfill with an impervious rolled fill core, both made by the Harza Engineering Co. A rockfill bid was low at $11.5 million, and was accepted, much to the satisfaction of the designers who felt that this was the proper type of dam for the site.

The dam will be 440 ft high, 1,560 ft long at the top and 1,650 ft thick at the base, giving a total volume of 9.2 million cu yd. Of this amount, 1,640,000 cu yd is in the impervious



The buttresses, the highest of them to be 613 ft, would make a dam 2,700 ft long.

DERBENDI KHAN DAM shown in an artist's sketch, and now under construction, will be a rockfill 440 ft high. Both upstream and downstream faces of the dam will be benched.

. . . Iraq dams: diversion tunnels penetrate slippery material

ABUTMENT BENCHING at Derbendi Khan is done in a limestone containing cavities and lenses of bituminous marl, which caused serious difficulties in tunnel driving. The two diversion tunnel portals are shown at the lower right, while on the topmost bench a cableway tower has been assembled at the left and the concrete plant for the spillway is under construction at the right.

core and 660,000 cu yd in pervious filters. The remainder is rockfill. Good limestone rock is available from quarries on both sides of the river a short distance downstream.

Two features distinguish the design of Derbendi Khan: both its up and downstream faces will be stepped in benches, and its spillway, of ogee overflow type with chute and deflector bucket, will have a discharge capacity nearly three times the maximum known flood at the damsite. Such a large capacity—410,000 cfs—was deemed necessary because of the absence of any long time flood records. The spillway will be located in the right abutment where a wide band of stratified but sound limestone and sandstone fortunately occurs in otherwise poor material consisting of limestone in alternate layers with a marl, which in some cases is also mixed with a bitumen. The spillway will require about 235,000 cu yd of concrete, and be equipped with three radial gates, each 50 x 50 ft.

Other characteristics of the Derbendi Khan project are that it serves a drainage area of 6,900 sq miles and has a reservoir volume of 2.5 million acre-ft, with enough dead storage capacity to accommodate the estimated silt deposits of 50 years. The stored water will be used for irrigation, flood control and power. A small initial power installation of two 800 kw turbine-generators operating under a 264 ft net head will be made, with provision to develop 100,000 kw if that should ever be needed.

• Tough job to get started—About every difficulty that could be imagined has plagued the U.S. contractor combine on Derbendi Khan in bringing the job to the point where actual dam construction can begin. This combine, made up of J. A. Jones Construction Co., Charlotte, N. C., Chas. H. Tomkins Co., Washington, D. C. and Tecon Corp., Dallas, Tex., found that a new road, which would give access to the dam both up and downstream, had not been completed; experienced a serious cave-in of one of the diversion tunnels; suffered a fire which destroyed its carpenter shop and all of its lumber; and had to contend with a flood that washed out a construction bridge and all low level access roads. Machinery breakdowns and a shortage of operating personnel also helped to put the job behind schedule but as of now most of these troubles have been licked, and the work is moving ahead.

The major construction difficulty has centered in the diversion tunnels. There are two of these tunnels, one 20 ft in diameter, which was let to a French contractor when it was thought that a concrete gravity dam would be built and this would provide sufficient diversion capacity, and another of 30 ft diameter let later as a part of the rockfill dam contract. Both tunnels, about 2,500 ft long, are in the right abutment where the alternate layers of limestone and bituminous marl proved to be much less sound than anticipated. The layers tilt downstream, the limestone fractures easily and the bituminous marl slips, and also slacks and checks when it is exposed to the air.

The French contractor fell so far behind that the last half of the smaller tunnel was turned over to the U.S. firms, who then worked both tunnels simultaneously. Not only is steel centering required every 3 ft, but chuck boards have to be driven in between the centers in any way that will fit, to keep the fractured rock from falling. Very light blasting is necessary and, in fact, the rock frequently breaks off under the action of the drills alone. In the 30 ft tunnel, the average advance is only about 3 ft a day.

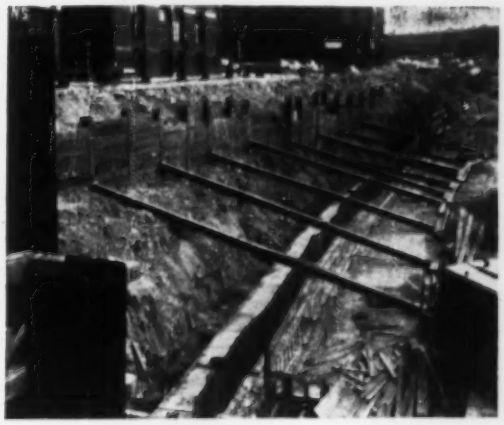
It was at the upstream portal of this 30 ft tunnel that the serious cave-in occurred. Here a slip in the bitminous marl created such pressures that the steel centering failed, daylighting the tunnel for a length of about 100 ft. Repair measures have consisted of constructing a concrete slab roof over the opening, strong enough to take the load of any further rock slides. Then under the protection of this slab the tunnel was re-excavated.

Both tunnels are being lined with concrete after which they will receive a steel lining. The sections of this lining are being fabricated outside the portals, and as fast as they are completed they are moved into the tunnels on rail dollies. The diversion tunnels, which have a combined capacity of 60,000 cfs, will eventually be used to accommodate outlet conduits and penstocks.

The dam itself will be founded on the limestone and marl formation, which should offer no such difficulty as it has in the tunnels where it had to be pierced and exposed to the air. Present work consists of laying back the abutments in benches to remove surface material and to prevent slides later. Blasting for this work also has required light charges to lift large areas not just blow holes in the ground.

(Continued on page 37)

Bethlehem H-piles provide lateral support for excavation for railroad tunnel under construction at Salem, Mass. *Contractor:* Farina Brothers Co., Inc.



Construction of Boston's Fitzgerald Expressway included placing of Bethlehem H-piles as soldier beams. *Contractor:* V. Barletta Co.

Soldier beams and bracing support foundation of existing buildings adjacent to new Jordan Marsh Building, under construction in Boston. *Contractor:* Spencer, White, and Prentis, Inc.

Steel H-Piles Used as Soldier Beams on Three Jobs in Massachusetts

For three important construction projects in Massachusetts, Bethlehem H-piles were used as soldier beams in open-cut excavations.

The first job is a portion of the construction of Boston's new Fitzgerald Expressway, a heart-of-the-city superhighway. Here H-piles were driven vertically on the sides of a large open cut during the building of a tunnel and ramps. The piling and its lateral bracing will prevent slides and protect existing foundations and adjacent streets.

Bethlehem H-piles were used in the same way in the construction of the new Jordan Marsh Building in Boston. Here adjacent building foundations were protected by the H-piles together with horizontal timber lagging and lateral braces.

At Salem, Mass., an open cut for a railroad tunnel was also protected by the soldier-beam method. Bethlehem H-piles retained foundations of streets on which traffic continued to move.

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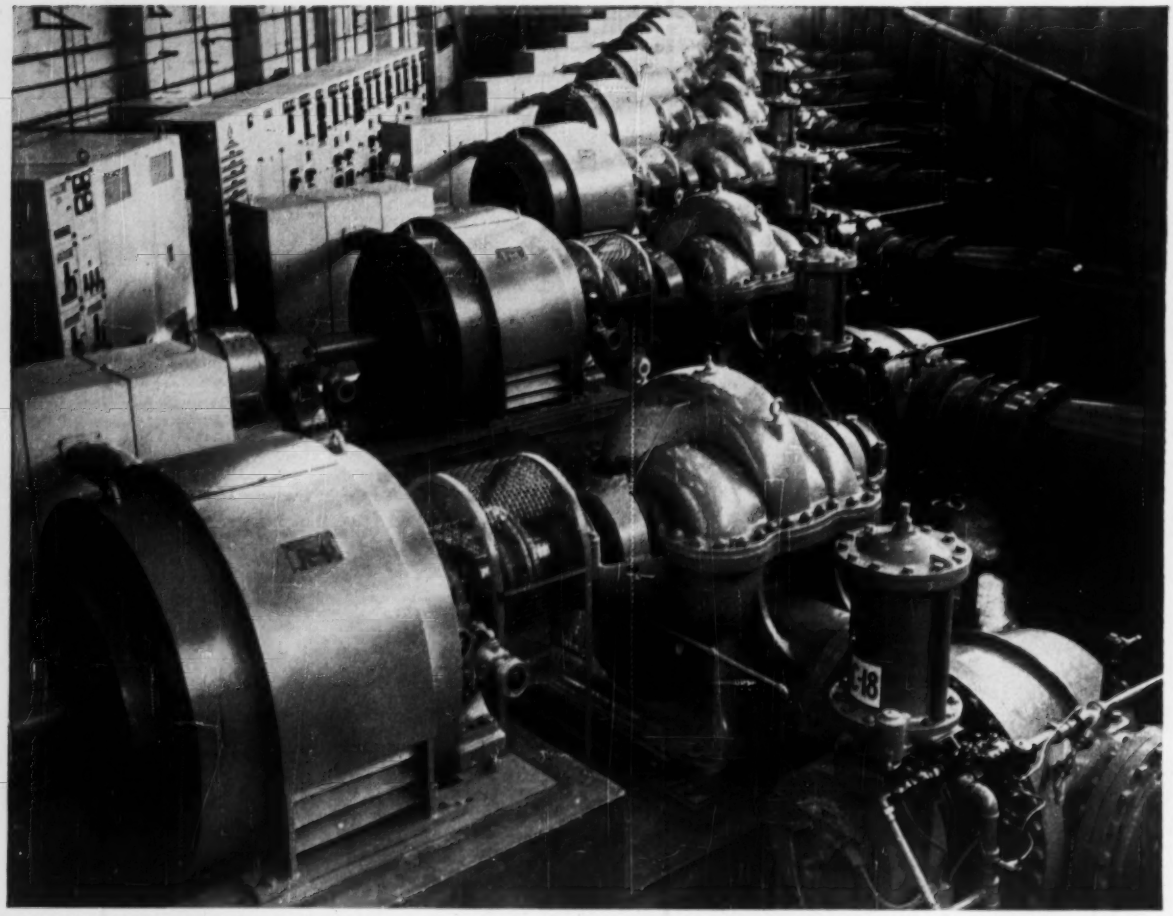

Eight 24" SMS-Rotovalves are used for pump check service at the Secondary Pumping Station of the U. S. Air Force's Arnold Engineering Development Center in Tullahoma, Tenn.* Installed on 25,000 GPM pumping units, each hydraulically-operated Rotovalve has independent timing control for opening and closing, and a by-pass fast closure device for shut down in the event of power failure. Four more 24" Rotovalves perform similar service at the Primary Pumping Station.

CLOSE CONTROL OF TIMING MAKES SMS-ROTOVALVES CHOICE AT TULLAHOMA

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SMS-Rotovalves' full-line opening offers no more resistance than straight pipe of the same diameter, means less head loss and lower pumping costs. Maximum initial shut-off, with retarded area reduction at the closing end of the stroke, controls water hammer. Opening and closing can be as fast as one second, or as slow as needed. Closure is drop tight, and monel-to-monel seats are self-purging.

You can obtain full information on SMS-Rotovalves, Ball Valves or Butterfly Valves by contacting our nearest representative. Or, write to S. Morgan Smith Co., York, Penna.

*Under construction by the Corps of Engineers, U. S. Army.

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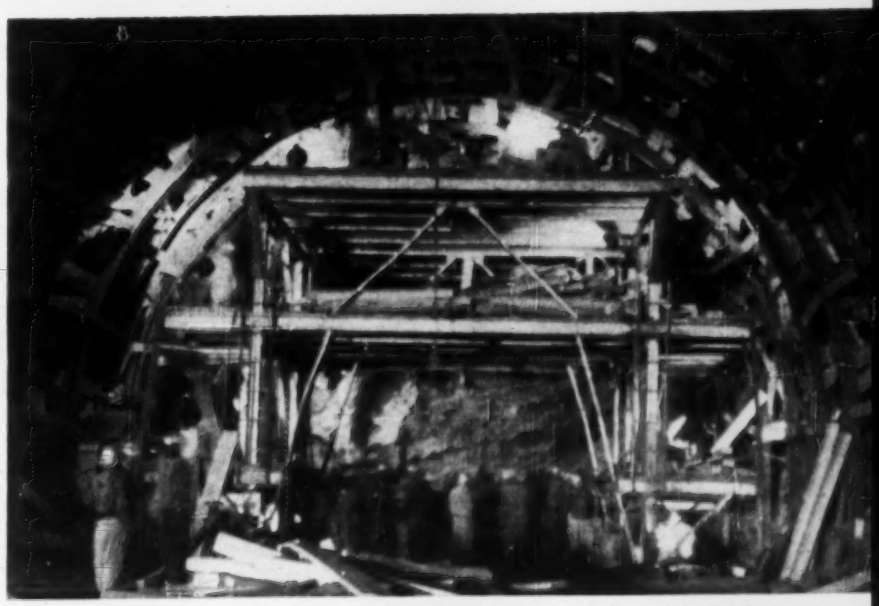
BLASTING on the Derbendi Khan abutments is done with light charges placed in 6 in. holes drilled 20 ft deep on 8 ft centers. The object is merely to lift and loosen relatively large areas, which can then be excavated by power shovels.



TUNNEL DRIVING at Derbendi Khan is basically a job of keeping the roof from falling in long enough to get a concrete lining in place. Note the chuck boards forced at all possible angles between the steel centering ribs, which are spaced only 3 ft apart.

When this work is finished, dam embankment will be begun at the upstream toe, this part of the final dam constituting the initial dry season cofferdam. In the same way, as embankment placing continues, the central part of the dam up to about half the ultimate 440 ft height will constitute the wet weather cofferdam.

Total excavation for the dam construction includes 2 million cu yd of common and 4.2 million cu yd of rock. Concurrent with this work the contractor will manufacture his concrete aggregate from river gravel in a crushing and sand screening plant, already in operation so that spillway construction can begin on schedule. Derbendi Khan's completion date is set for March 1, 1960.

• **High concrete arch**—In contrast to the rockfill at Derbendi Khan, Dokan will be a concrete arch. Under construction for about three years at, too, is scheduled for completion by 1960. Dokan will rise to a height of 381 ft above the lowest foundation, be 1,181 ft long at the crest and contain 476,500 cu yd of concrete, so that it is an arch of major proportions.

But the project has even more notable characteristics. Grouting of dam foundations and adjacent reservoir bottom and sides cost $6.5 million, and required the drilling of 675,000 ft of holes into which 46,500 tons of cement and 32,000 tons of sand were injected. There are two spillways through the rock of the left abutment, one a bellmouth atop a vertical shaft 318 ft deep. And there are five 12 ft dia penstocks embedded in the dam to serve a future 200,000 kw power station whose turbines will operate under a mean effective head of 260 ft.

Dokan Dam was designed by the London consulting firm of Binnie, Deacon & Gurley, and checked by a panel of international experts consisting of S. O. Harper, U.S., Andre Coyne, France and H. D. Morgan, Great Britain. It is being built by a French contractor, Dumez-Ballot of Paris. It is also worth noting that the British designers used a new type of arch analysis in which the calculation of the theoretical stresses was carried out by relaxation methods, supplemented by model studies. The arch analysis was described in the May, 1956 Proceedings of the Institution of Civil Engineers (London), Paper No. 6113.

The dam is located at a point where the Little Zab River makes a sharp hairpin bend to the left, so that the left abutment is a "peninsula" between adjacent gorges. This was an ideal situation for placing diversion tunnels from the reservoir to the downstream gorge, but required careful investigation of the strength of the "peninsula" to act as an abutment of an arch dam.

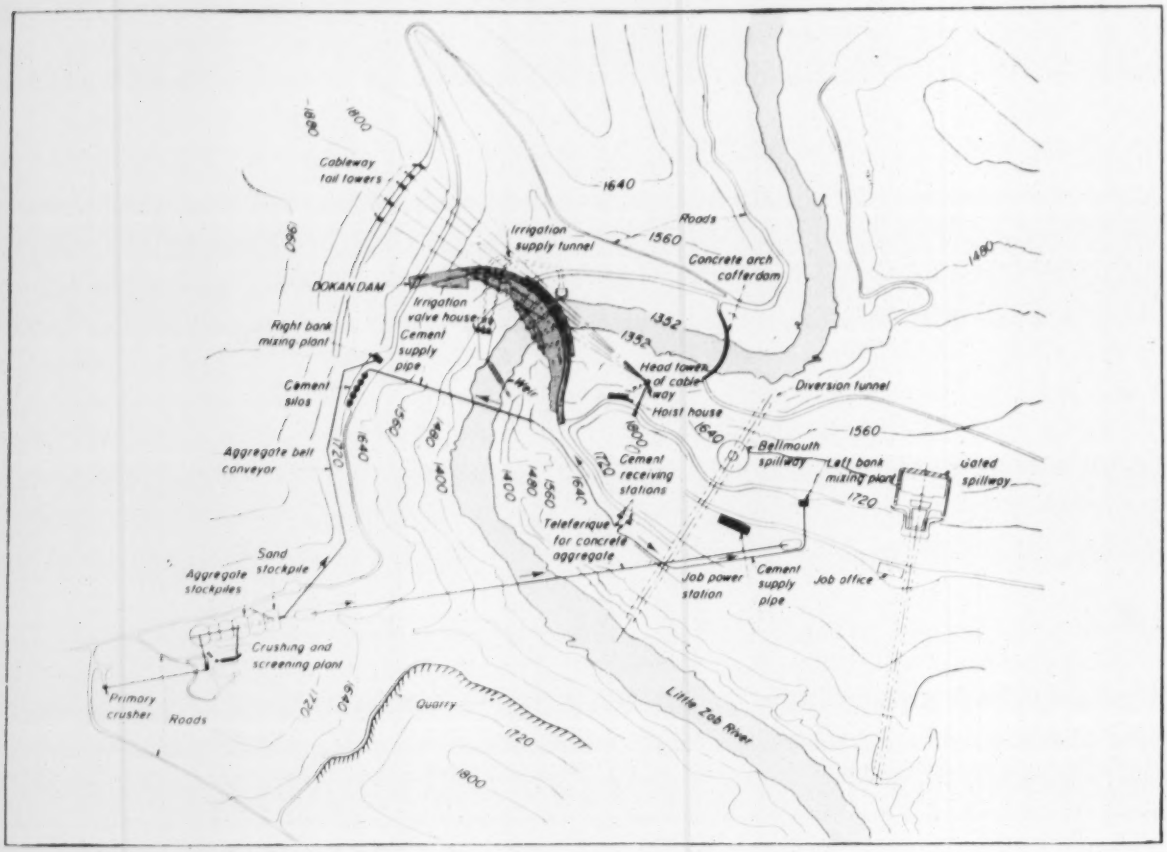
This investigation, encompassing a vertical shaft (in which an elevator will later be installed) and numerous adits, revealed that a jointed dolomite, to a height of about 235 ft, was overlaid by a cavernous limestone. This was the tipoff that an extensive grouting program would be required and, before the left abutment was made sound, it was stuck full of holes like a pincushion. About 100,000 linear ft were drilled and injected with 2,100 tons of grout in this relatively small area.

Although the bottom of the river was sound rock, the dam foundation was blanket grouted nevertheless. Also a grout curtain was extended for 4,500 ft up the left bank of the reservoir and for 3,000 ft up the right bank. Holes were spaced 6 ft on centers under the dam and 12 ft elsewhere. The total hole footage was 675,000 and the grout tonnage 76,500. Maximum grouting pressures used were 280 psi in the limestone and 560 psi in the dolomite.

The right bank abutment offered no exceptional difficulty; but because the contour of the formation sloped steeply downstream, a rather deep excavation was required on the upstream side of the dam to obtain a suitable plane of contact for its base.

The dam designed for this location is an arch (396 ft radius to the upstream face) resting on a massive concrete base (in which the power penstocks are embedded) and confined between concrete gravity section abutments. The arch, 20 ft thick at the top, is 95 ft thick at the bottom compared to a 178 ft thickness for the base on which it rests.

All horizontal sections through the arch have a constant radius, except in the lower part where they are filleted. Vertical contraction joints are on radial lines. They will be grouted after the concrete has been cooled to 5 deg below the final mean temperature pattern. Specifications limit the temperature rise to 30 deg over final temperature. Cooling is effected by circulating refrigerated water in pipe coils em-



CONSTRUCTION PLANT LAYOUT at Dokan Dam involves a crushing and screening plant, concrete mixing plants on either bank, a suspended pipeline to carry cement, cableways and a teleferique. Most of the dam concrete will be placed from the right bank.

bedded between each 5 ft lift of concrete, which is placed in blocks approximately 65 ft square. Several hundred thermometers are being installed to determine the concrete temperature, also a number of strain gages and pore water measuring instruments.

Conservative stresses were used in the design: 500 psi maximum compression and zero tension on the water face, 150 psi maximum tension on the downstream face. With these stresses it was assumed that any higher theoretical stresses due to temperature or earthquake loads could be disregarded.

• **Spillways and tunnels**—The largest flood in 30 years occurred in 1954, when the flow at Dokan was 132,000 cfs. Two spillways to take a total of 144,000 cfs were, therefore, designed since this amount of water could be handled downstream with but little damage to adjacent property. Recognizing, however, that much greater floods are possible, the design contemplates that the 5.5 million acre-ft reservoir will be drawn down before each flood season. In this way a 480,000 cfs flow could be handled.

The tunnel of the spillway nearest the dam (about 850 ft upstream) was designed to serve as a diversion tunnel during the dam construction period. With a diameter of 33.5 ft it was placed at El. 1330, some 10 ft above the lowest point in the dam foundation. Located in sound dolomite, its driving was relatively easy throughout its entire 1,115 ft length.

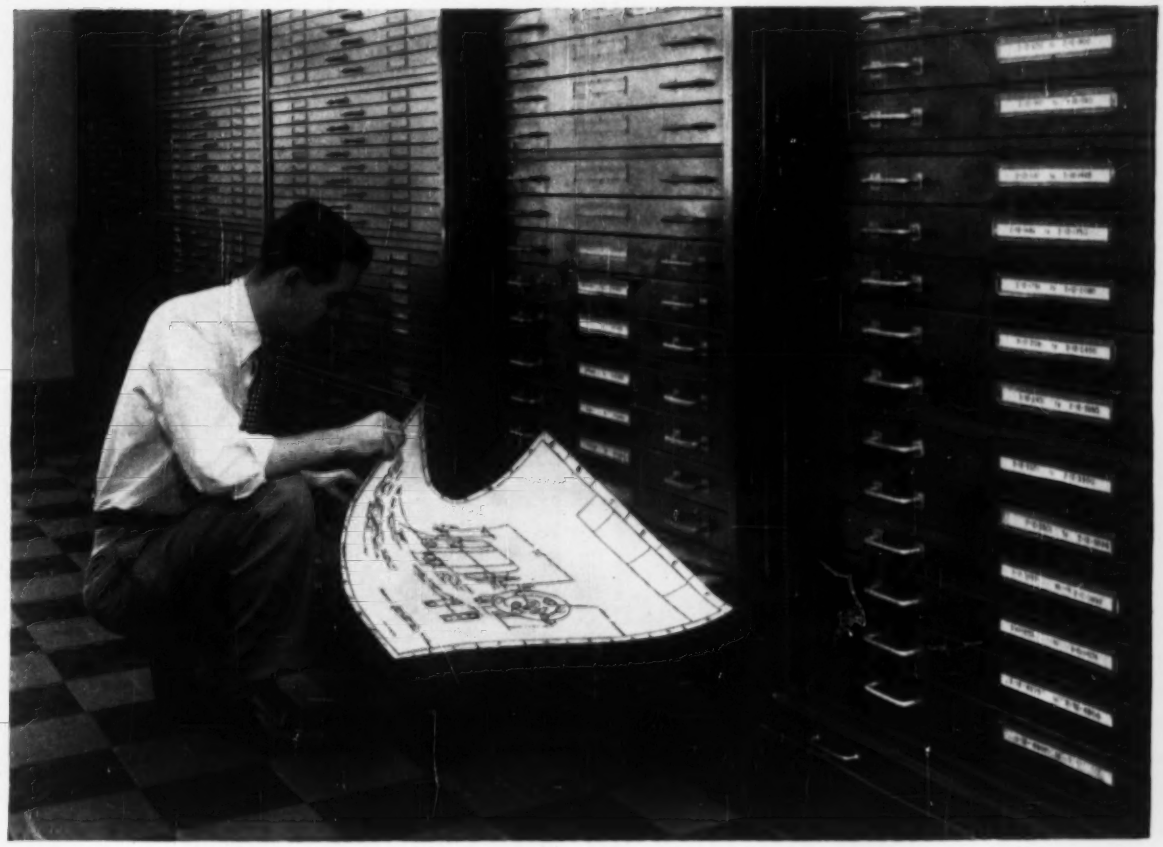
When the project is completed this tunnel will function as a spillway by virtue of a bellmouth inlet constructed at El. 1676 and connected to the tunnel by a vertical shaft nearly 300 ft deep. In order that the impact of water dropping this great distance will always be cushioned, provision will be made to keep the tunnel full of water at all times. This will be accomplished by constructing a branch tunnel near the outlet of the diversion tunnel, which will be inclined upward a distance of 40 ft. The original diversion tunnel outlet will then be plugged, as will also the inlet from the reservoir.

This bellmouth spillway, with a discharge capacity of 65,685 cfs, will only come into use in emergencies since its inlet is 47 ft higher than the inlet of the second spillway provided on the project. The 77,700 cfs spillway, some 800 ft farther upstream, has a gated intake, connected by a transition chute dropping 130 ft to a 36 ft dia tunnel, 1,000 ft long, which discharges into the river over a 150 ft high cliff. This tunnel is located in the cavernous limestone, so that driving was more difficult than on the other spillway tunnel.

Both tunnels are concrete lined and will carry water at a velocity of about 70 ft per sec. Concreting procedure was to place the invert first, followed by the walls in sections about 25 ft long. The same steel forms used for the walls were then raised to serve as the forms for the roof arch.

• **Irrigation tunnels**—Since the principal use of Dokan's stored water will be for irrigation (power generation is reserved for the future), supply tunnels for this purpose are also a part of the project. Actually there is a single 16 ft dia concrete lined tunnel in the right bank, which divides into two 8 ft dia steel lined tunnels which pass through the base of the dam, at El. 1366, to a valve chamber downstream. The total length of the irrigation supply tunnels, from intake to outlet, is 853 ft, and they will provide a discharge of 7,770 cfs.

• **Concrete arch cofferdam**—An unusual feature of the Dokan project is the use



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DOKAN DAM CONSTRUCTION is protected by a concrete arch cofferdam, foreground left view, and background, right view.

The completed gravity section abutment of the dam may be seen in left view, and the dam base and penstocks in the right view.

of a thin concrete arch for the upstream cofferdam. Originally it had been intended to build a gravity section, but high water at the time made it impracticable to dewater the area and examine the foundation conditions. Therefore, the contractor placed a gravity section base under water and, to lighten the load on the unknown foundations, made the top part of the structure an arch. It is 100 ft high, 5 ft wide at the top and 20 ft wide at the base. Designed to be overtopped, the dam was constructed with three "air towers" on its crest to smooth out the flow, which they did when an actual overtopping occurred.

Under the protection of this cofferdam and a small rockfill cofferdam downstream, dam concreting is now in full swing. Foundation excavation was a minor task since only about 20 ft of gravel overlaid the dolomite. While this dolomite was being grouted, concreting was begun on the gravity section right abutment, high on the side of the canyon.

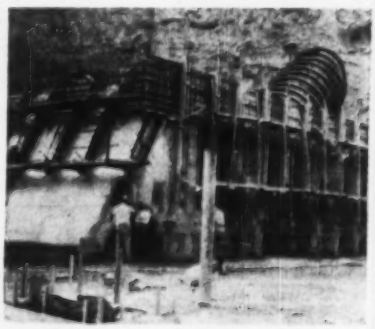
This is now completed, and present work is concentrated on the dam base in which the penstocks are located. Installation of these penstocks is time-consuming since the 1¼ in. plates for the 12 ft dia pipes come to the job flat, and have to be rolled and fabricated, the latter including the attachment of trussed rings around the pipe to strengthen it and to provide effective anchorage in the concrete.

• **Concreting facilities**—The construction plant for Dokan concreting is spread over a large area since mixing plants are required on both sides of the river, but with aggregates originating on one side and cement on the other. Cement is moved across the gorge in a suspended pipe while the aggregate is transported in buckets on a teleferique.

The left bank mixing plant, containing two 1 yd mixers, is located between the two spillways, serving them and their tunnels as well as supplying concrete for the left abutment of the dam. The right bank mixing plant, containing four 1 yd mixers, supplies the bulk of the dam concrete, which is distributed by five cableways connected to a single head tower on the left bank. This tower—a mast with an inclined anchor leg—is steadied by a series of guy cables that extend completely across the gorge to deadmen planted high on the right bank.

Aggregate for the concrete comes from a quarry about a quarter mile downstream on the right bank. Trucked to the crushing and screening plant about midway between the quarry and the dam, the rock is processed into aggregate of 6 in. maximum size. From here the aggregate is trucked to the right bank mixing plant, and sent to the left bank plant via teleferique. Transport of concrete from the plants is by hopper body trucks, which in the case of the right bank plant dump into the 2 cu yd buckets of the cableways.

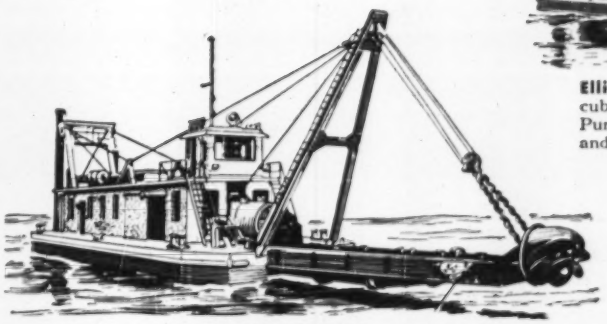
About next June, dam concrete will be up far enough that the diversion tunnel gates can be closed, and storage of water begun. Since the irrigation tunnels are finished, Dokan Dam will actually be serving the downstream farmlands nearly two years before it is finally completed.



CONCRETING is done in 5 ft lifts and in blocks about 65 ft square.

CLEANING THE SURFACE is done with a water and compressed air jet. Piping is for concrete cooling water.

Ellicott "DRAGON" 12—Dredges 125-500 cubic yards per hour of mud, silt, sand and clay. Pumps through pipeline up to 4000 feet long and works in minimum canal width of 50 feet.

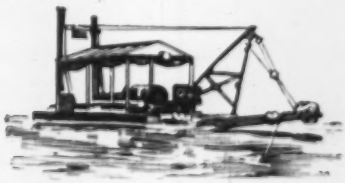


Ellicott "GIANT DRAGON" 20—assembled in a few weeks; can pump 350-1300 cubic yards per hour through pipelines up to 10,000 feet long. Diesel-electric power.

Ellicott "DRAGON" 10—Easily assembled in 4 days, pumps mud, silt, sand and gravel through pipelines up to 2500 feet long; capacity 90-325 cubic yards per hour.

DRAGONS*

FOR SALE



Ellicott "DRAGON" 8—Capacity 60-150 cu. yds. per hr. through pipeline up to 2000 ft. long. "Dragons" available with enclosed or tropical deck house, as shown.

. . . To convert swamps into valuable real estate, clean industrial ponds, desilt reservoirs and irrigation canals, maintain inland waterways, do hundreds of other dredging and earthmoving operations

DRAGONS . . . Ellicott "Dragon*" model dredges . . . offer engineers the cheapest method of moving water-bound solids. Whatever the problem, they will do the job! And do it so efficiently, compared with other methods, that the first year's savings will often pay for the dredge.

Yet economical operation is only one Dragon advantage. Ellicott Dragons are portable . . . easily knocked-down, easily reassembled. They can be moved quickly, anywhere, to work on many diversified applications throughout the years.

In addition to Dragons, Ellicott builds a full range of heavy-duty and special type dredges. Write for free Bulletin No. 925. ELLICOTT MACHINE CORPORATION, 1603 Bush Street, Baltimore 30, Md.

Ellicott "DRAGON" Model Canal Dredges—6 to 12 in. sizes, designed for irrigation and drainage canal maintenance, work in 13 ft. minimum width, assembled in one day.

*T. M. REG. U. S. PAT. OFF. MARQUE DÉPOSÉE

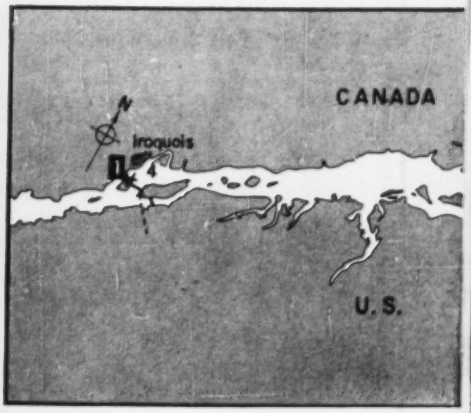
ELLICOTT MACHINE CORPORATION

1603 Bush Street, Baltimore 30, Maryland, U. S. A.

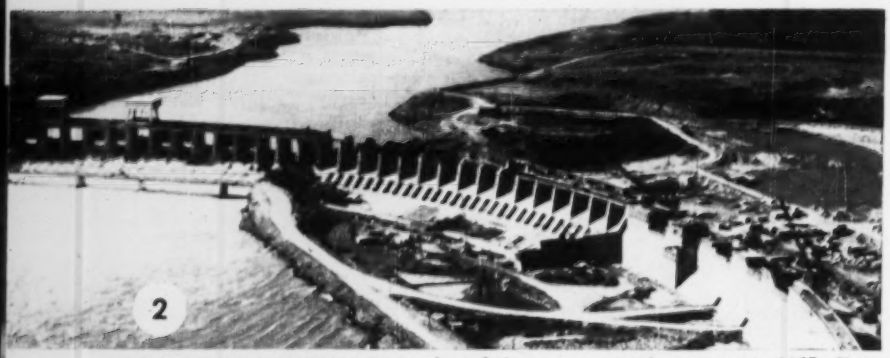
Subsidiaries: Dragues Ellicott France, Paris, France; Ellicott de Mexico, Mexico City, Mex.; Ellicott Fabricators, Inc., Baltimore, Md.; McConway & Torley Corp., Pittsburgh, Pa.; Baltimore Foundry & Machine Corp., Baltimore, Md.

Successors to the floating dredge business of the Bucyrus-Erie Co. and the American Steel Dredge Co. Complete engineering sales and repair parts service.

THE INTERNATIONAL POWER DAM has U. S. constructors on schedule and again shut down for winter on mass concreting. Canadian constructors, per custom, will work all winter and catch up to the U. S. in concrete yardage placed.

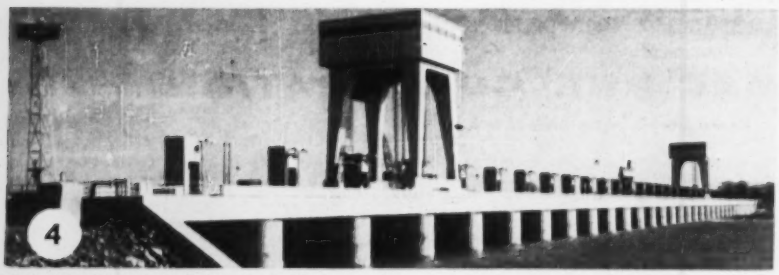


POWER project structures head into the homestretch with nine-tenths of their 3 million cu yd of concrete in place. Power production is due Sept. '58



LONG SAULT SPILLWAY DAM showed the most spectacular progress in 1957. Every bit of concrete within the second stage cofferdam (center, foreground) was placed since June.

MASSENA INTAKE is finished across Alcoa's power canal. When the St. Lawrence powerhouse is done, openings will be plugged and pumps will supply water to Massena.



IROQUOIS DAM finished in '57, is gated structure at upstream end of power pool, to prevent its future 4 or 5 ft fluctuations from affecting river level upstream.

St. Lawrence

The third and last big construction year has come to a close on the International Rapids section of the St. Lawrence River. And the $800 million worth of power and navigation projects there is definitely over the hump.

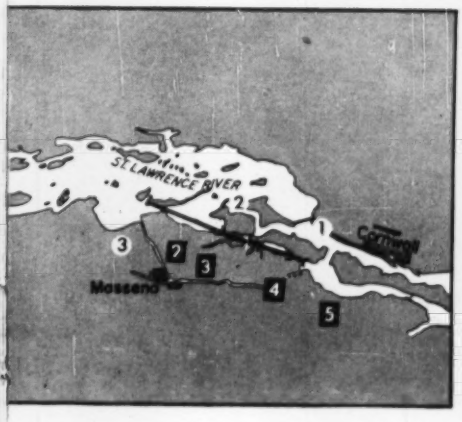
It will be all downhill from here on in. Problems remain, of course, and certain few elements of the work still must be pushed pretty hard. But the critical scheduling is past for both lock and dambuilders.

Only one vital, coordinated operation looms ahead. In the brief period of a few days before next July 1, the pool behind the power and spillway dams must be raised to flood Long Sault Canal and its locks for limited navigation (14 ft draft, as opposed to the 27 ft depth when finally completed for the 1959 navigation season).

All structures and channel work must be ready for this big event. Gates must be in place at locks and dams; major cofferdams must be out—or ready to be blown out, as in the case of the earth plug upstream from the power dam. Channel dredging downstream must be sufficiently finished, in spite of its late start. And there is now every reason to believe that all performers in this complex river-juggling act will be ready. (For who's who on the St. Lawrence Seaway and Power Project, see ENR Nov. 3, 1955, p. 34).

Pictures presented here tell the story of progress to date, through the busy 1957 season.

The four main structures of the $660



LONG SAULT CANAL is a straight, wide cut across islands and mainland on the U. S. side of the St. Lawrence. Clean-up, a little suction-dredging, and some plug removal remain on the major, 13 million cu yd canal excavation contract.

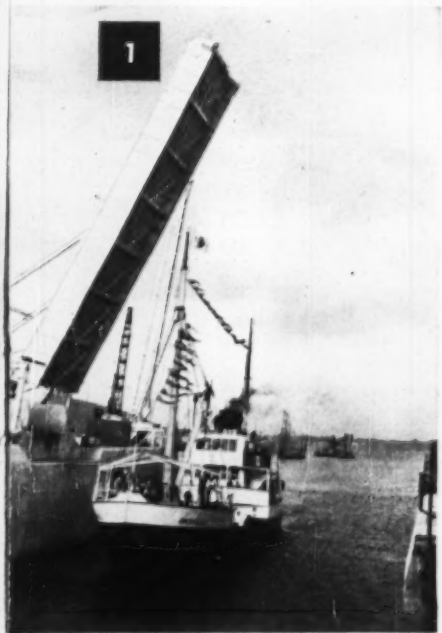
SEAWAY elements are even nearer completion. Canadian lock (below) is ready; U. S. locks, canal and channels must be ready before next July 1.

Race Won in '57

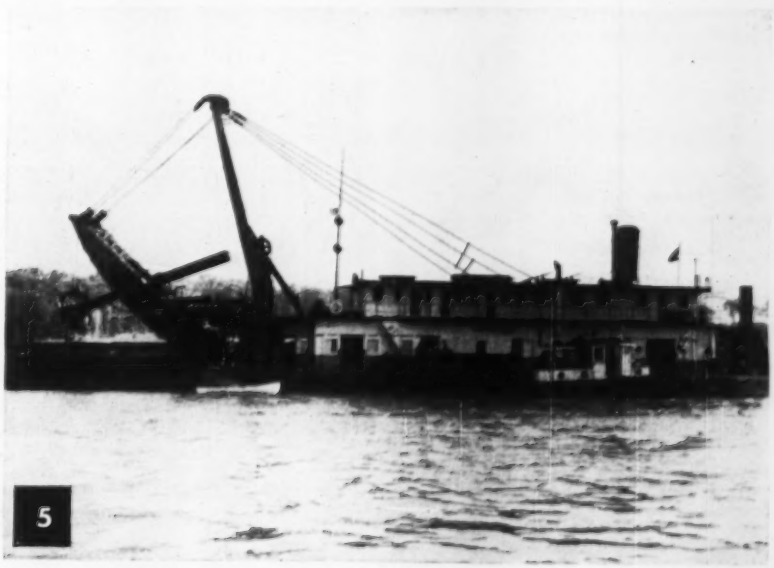
million power project (photos at left) are shaping up to make a 25-mile-long power pool of the International Rapids; and the $140 million worth of locks and canals (photos below and right) will be ready to take shipping past these dams when the pool is raised next July 1.

EISENHOWER LOCK gets its gates as highway tunnel under far end is finished.

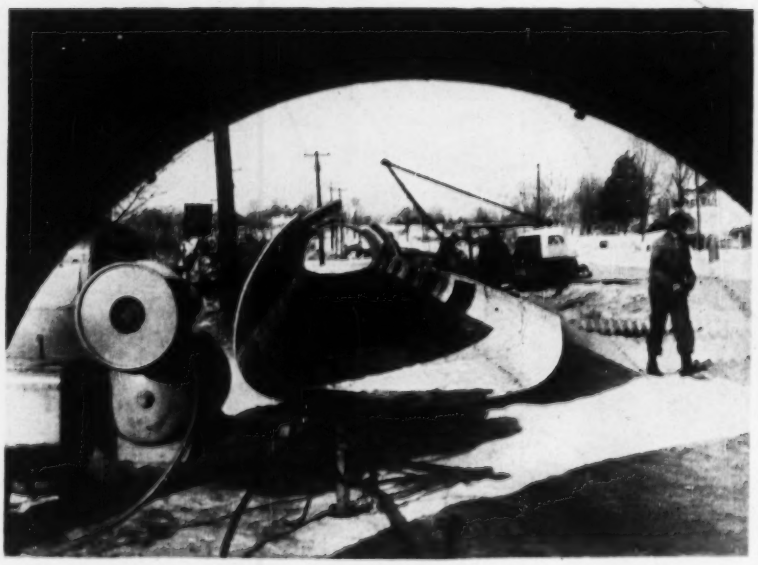
GRASS RIVER LOCK gets its control houses (alongside gates) as well as its controls.



IROQUOIS LOCK is finished, tested, and ready for future use as a low-lift structure.



SOUTH CORNWALL CHANNEL, downstream from Long Sault Canal, must be dredged and straightened in time for 1958 use. Schedule here demands a full winter's work.



Bridge construction in Michigan during February. Picture shows Armco MULTI-PLATE® Pipe-Arch being assembled on elevated ground near the stream bed where it will be installed as a bridge under earth fill. Cold weather does not stop the work, because there is no curing period when Armco Structures are installed.

Armco Construction

Bridge Out! Barricade Up!
New Bridge In the Quick Armco Way

Here is the way to solve the problem of obsolete or failing small bridges *quickly* and *permanently*. An Armco Corrugated Metal Drainage Structure, plus an earth fill, will eliminate such hazards as narrow, side-rubbing bridges; weak, limited load structures; money-eating maintenance programs like repainting, reflooring and similar jobs.

Here are the fast, economical steps to the safest, simplest, easiest-to-maintain stream crossing structure you can get.

FIRST: Select the size, gage, shape and type of Armco Corrugated Metal Drainage Structure to meet the specific loading and waterway area requirements and service conditions.

Technical Reference: "Armco Manual CMS-5857"; Armco Manual MP-1655"

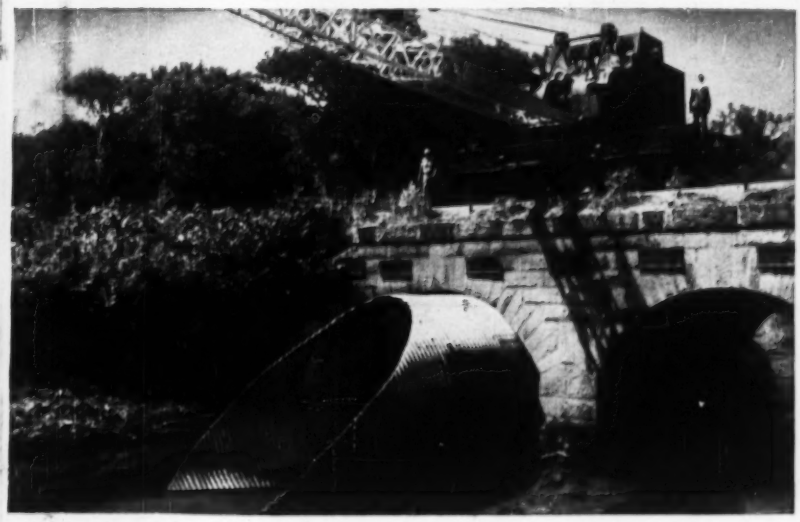
SECOND: Install the Armco Structure by threading into or lining the old structure, or by completely replacing the existing structure.

Technical Reference: "Installation Manual, Armco Drainage Structures"

THIRD: Backfill and put in service immediately, without delay for curing, without threat of cracking, breaking, disjointing, loss of waterway area or load carrying capacity.

Technical Reference: "Installation Manual, Armco Drainage Structures"; "Armco Manual CMS-5857"

You'll gain other important advantages too—in the design stage, construction stage, and through long years of service. For details or information about your bridge structure, stream enclosure or other drainage problem, write us outlining your plans. Armco Drainage & Metal Products, Inc., 5977 Curtis St., Middletown, Ohio. Subsidiary of Armco Steel Corporation. In Canada: write Guelph, Ontario, Export: The Armco International Corporation.



Technique of threading Armco Structure into existing bridge often makes it possible to do a replacement or rehabilitation job without disrupting traffic. This is one of many installations serving under heavy railroad-loading conditions.

Write For Technical Literature Mentioned Above

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These Too Are Armco Products, To Help Make Your Construction Job Easier . . . RESULTS BETTER

Armco Pipe Piling and Pile Shells...Welded Steel Pipe for Water Supply Systems

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Products

Plant Trenches NEED CLEAN, DRY COVERS

TRENCHES in floors of industrial plants often house subsurface pipes, valves, etc. Often these trenches are covered with cast iron plates or wooden boards which collect grease, oil or water, making unsafe floor areas.

Trench covers of 75% open Irving metal grating remain safe because they will not collect these substances. In addition to providing drainage and traction, grating sections can be easily removed for access to trenches.

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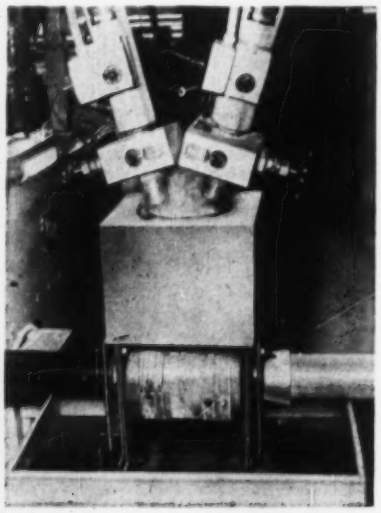
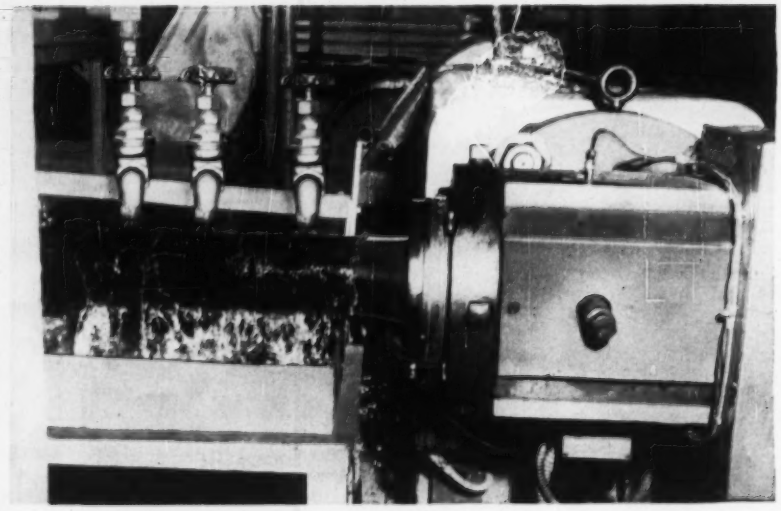
New Products

Elastic adhesive is first applied to steel pipe, then . . . →

Outer coat of extruded polyethylene is put on, cooled and shrunk to tight fit ↓





Plastic Coated Steel Pipe Ready for Use

Republic's X-Tru-Coat steel pipe is protected against external corrosion by a plastic coat of armor, and is ready for use when it leaves the mill.

Butt or electric weld pipe is first covered with an elastic adhesive undercoating applied hot.

A controlled thickness of polyethylene is then extruded over this and cooled, causing the plastic to shrink tightly around the pipe. The coating is cut back from the ends to allow joint making.

Full scale production of the pipe—claimed to be the first in the industry to be coated with extruded polyethylene—is under way in sizes from ¾ to 4½ in. OD in various wall thickness. The polyethylene coating is at least 0.025 in. thick.

The manufacturer points to the "live" elastic undercoating as the key to the armor's success. The adhesive does not set up or become hard or brittle, allowing the pipe to be flexed or bent without destroying the bond. In addition, the company says, the undercoating is unaffected by extreme seasonal temperatures, and never loses its ability to seal cuts or abrasions.

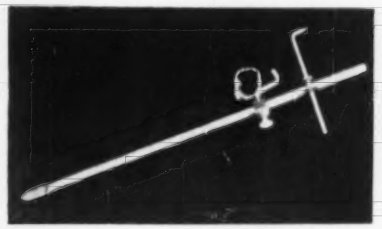
The polyethylene outer coat also lends itself to flexing. Field joints in the coating can be made with regular pressure sensitive tape and primers, the maker states. PIPE DIV., REPUBLIC STEEL CORP., CLEVELAND, OHIO.

Cement Rides on Air In New Feeder Mechanism

A recent development is a cement feeder known as the Butler Airflomatic. It employs a cushion of high volume, low pressure air on which the cement rides. According to the manufacturer, it provides positive feeding at all times.

Air is supplied by a blower that also aerates and fluffs the cement in the overhead bin.

The feeder can be installed on all road batching or ready mixed concrete plants. Butler Bin Co., Waukesha, Wis.



Metal Grade Stakes Save Time and Money

Surveying crews increase their output with a reduction of personnel by using the Gradeline Metal Stake, according to the manufacturer.

The 30 in. stake is driven into the subgrade by hand or mechanical means. The line and station arm is then placed at the intersection of line and station and locked in position. Grade at this point is shown at the top of the offset arm. George E. Long Co., 16041 33rd Ave., N.E., Seattle 55, Wash.

Water-Aggregate Mixer For Base Stabilization

A stabilized base mixer that will provide 300 to 500 tons per hour of aggregate mixed with water now is available.

The unit, designated as Model 2 Twin Shaft Stabilized Base Mixer, consists of a twin shaft mixer, discharge hopper, self-priming pump and meter. Front and rear running gear are available to support the frame without legs on between-job moves. A calcium chloride feeder unit with metering gate, screw conveyor and drives is available as optional equipment.

Water, controlled by a 3 in. centrifugal pump, is spaced on the conveyor fed aggregate. Mixing to the proper moisture is done with 60 paddles attached on the shafts, as the aggregate moves to the 2½ cu yd discharge hopper.

The all-welded mixer's capacity is 27 cu ft below the center-line of the shafts and 70 cu ft at water level. The 60 alloy iron paddle tips are adjustable and they can be reversed, end for end.

Optional equipment includes a 10 cu yd feed hopper. Iowa Manufacturing Co., Cedar Rapids, Iowa.

Spreader Doubles for Aggregate, Ice Control

A materials spreader known as the Century Junior can be used for jobs ranging from conventional chip or sand spreading on fresh bituminous application, to controlled spreading of abrasives, salt or calcium chlorides for ice control.

The spreading mechanism is driven through special gears by the rubber tired wheels. Spread can be adjusted to any direction. Adjustable wings prevent spraying on passing cars and volumeteric control is obtained through lever operated gates. Bridging of materials is prevented by an agitator at the bottom of the 2 cu ft hopper. Seaman-Andwall Corp., Milwaukee 1, Wis.

Winter Liner for Use Inside Safety Helmets

A winter liner for use on the inside of safety helmets is now available. The manufacturer says it fits comfortably, and gives added protection to the head, neck and ears from wind and cold.

The style shown is made of wool with cotton flannel lining. Other styles and materials also are available. Industrial Products Co., 2989 N. Fourth St., Philadelphia 33, Pa.

(New *Products* continued on page 48)

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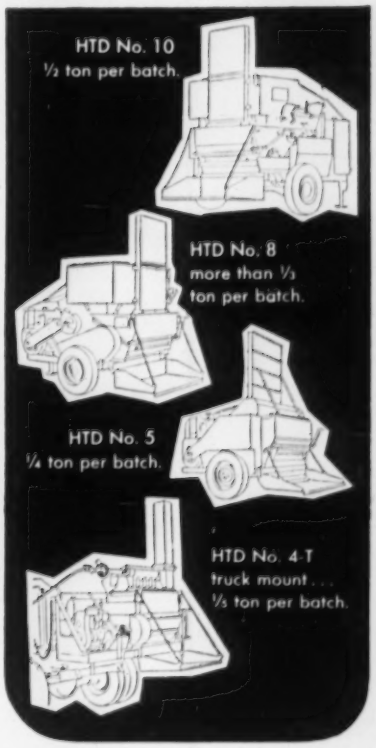
McConnaughay ASPHALT MIXERS



For details and specifications write . . .

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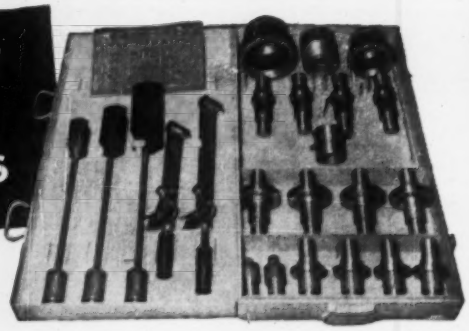
3314 Cherry Lane, Fort Wayne, Indiana

"IN-PLACE" SHEAR READINGS



FAST, ACCURATE, WITH NEW ACKER VANE TEST KIT!

The Acker Vane Shear Test Kit has everything needed to obtain fast, accurate, "in-place" shear readings to depths of 100 feet!

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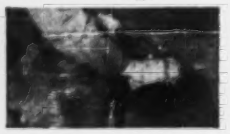
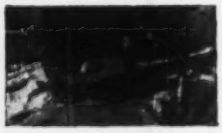
Assemble the Vane to the Rod!

Insert in Casing and Apply Pressure to the Torque Wrench!



Consult the Torque Chart for Accurate Reading!



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Education

Kentucky Marks 10th Year Of Road Engineer Training

With a record of providing educational and professional opportunities for some 200 high school graduates, Kentucky's highway engineer's scholarship program reached a milestone recently when it passed its tenth anniversary.

Conducted at the University of Kentucky at Lexington, the program is credited with aiding the State Department of Highways to fulfill at least in part its need for graduate engineers.

Started in 1948, largely through the efforts of D. V. Terrell, longtime dean of the University's College of Engineering, and D. H. Bray, chief engineer of the Highway Bureau, the program consists of grants amounting to $500 a scholarship for a one-year period. Recipients are selected by competitive examination and personal interview conducted by the college. Those chosen may begin on-the-job summer training with the Department immediately after graduation from high school. After completing their freshman year at the college, they may elect to work summers only and complete the four-year study course in four years; by a cooperative school-work program, they may get their degree in five years. In either case, recipients are obligated to work for the Department of Highways for one year following graduation.

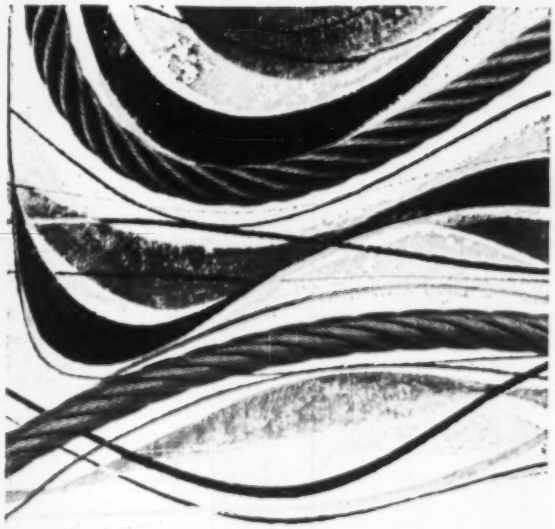
Highway Study Fellowships Offered at Yale University

The Yale University Bureau of Highway Traffic announced last week that fellowships are available to qualified graduate engineers who would like to enter the profession of traffic engineering as a career.

Fellowships cover a full academic year of graduate study, starting in September, 1958, and terminating the following May. They provide a living stipend of $1,400, disbursed at the rate of $175 per month for a period of eight months, while a student is enrolled. The fellowships also provide tuition of $600.

The fellowships are made available to the Bureau through grants from the Automotive Safety Foundation, Esso Safety Foundation, Liberty Mutual Insurance Co., and James S. Kemper Foundation.

Applications for admission and fellowships may be obtained by writing Fred W. Hurd, director, Bureau of Highway Traffic, Yale University, New Haven, Conn.



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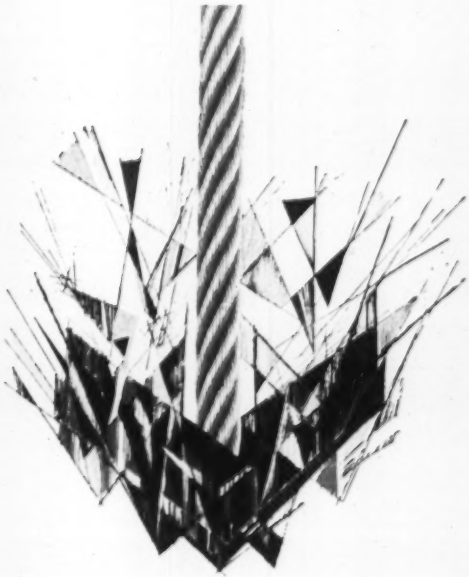

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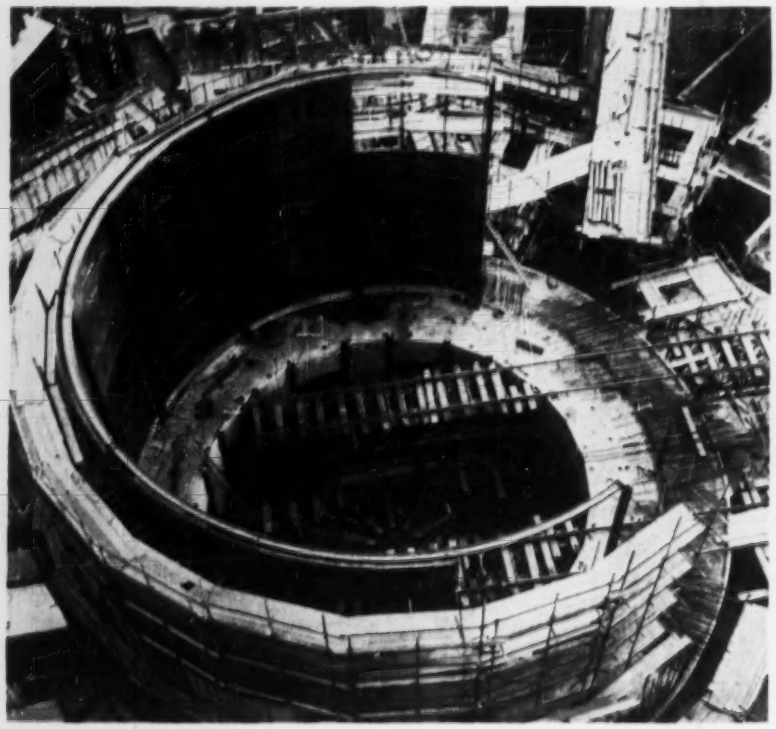


THERMAL SHIELD of steel plate will surround nuclear reactor. It, in turn, will be surrounded by biological shield of concrete.

COOLING WATER pipes leading from Severn to turbine plant are put in place.

CRANE works from river bank at ebb tide to construct water intake.

The first full-scale commercial nuclear power plant in Great Britain is under construction in Berkeley, Gloucestershire. Work on the project began in January, 1957, by John Thompson Nuclear Engineering Co. To date, all excavations have been completed, turbine and reactor foundations are in and placement of reactor shields has begun.

The new plant will consist of two reactors, heat exchangers and conventional generating facilities. Steam generated in heat exchangers surrounding the reactors will drive the turbines—with carbon dioxide used to transfer heat from the reactors to river water.

• **Site development**—Since the Berkeley plant is located in the flood plain of the Severn River, a high water table had to be lowered. This was done by surrounding the excavation site with well points and using submersible pumps to control the ground water. Also, the general site level has been raised an average of 10 ft by importation of over 250,000 cu yd of hardcore fill, placed to a depth of up to 12 ft in some places.

Excavation for the reactor pits, 30 ft deep and 300 ft in diameter, amounted to 165,000 cu yd. The turbine plant, occupying an area of about 500 x 100 ft to a depth up to 45 ft, required the removal of some 95,000 cu yd of earth.

The Severn will supply cooling water to the generating plant through two tunnels whose intakes will be 650 ft offshore. These tunnels will be 115 in. in diameter, made up of precast concrete segments. The warm water discharge from the plant will be through two 81 in dia concrete pipe culverts with outlets close to the bank and slightly upstream. To prevent reentry of the warm water, a 1,500 ft long baffle wall, made up of box piles, is being driven into the river bed.

Construction of the turbine plant portion of the project is being done by Balfour Beatty & Co., Ltd., while the reactor construction is being handled by John Laing & Son, Ltd. Civil engineering consultants for the project are W. S. Atkins & Partners.

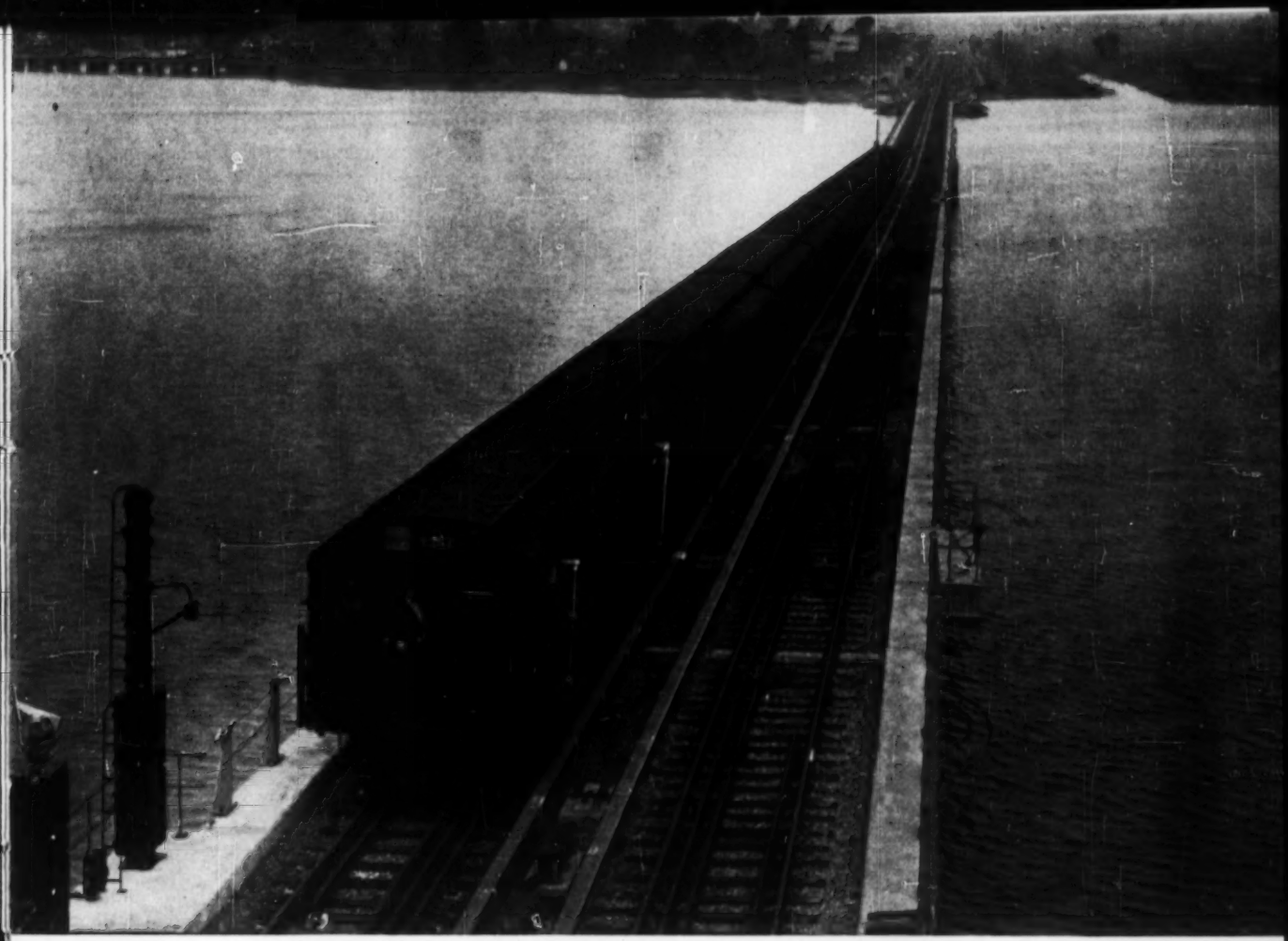
Completion is scheduled for 1961, with one reactor being in operation in 1960. Total rated output for the plant will be 275,000 kw.

Photo-Reading Technique Aids Fight Against Muskeg

What is said to be a new discovery—a method of reading a photograph—is expected to speed development of a 500,000 sq mi area of Canada's mineral-rich northlands.

The area, nearly twice the size of Texas, is a peaty bogland (locally called muskeg) which has stalled development by mining and petroleum companies.

(*Continued on page 52*)



Jamaica Bay Crossing, serving the Rockaway Extension of New York's Rapid Transit System, has 33,000 sq. ft. of wrought iron plate for protection against salt air and salt water corrosion.

This subway goes to sea over piers protected with 300 tons of Wrought Iron Plate

Protective scale which normally forms on the surface of wrought iron plates provides a long life additive for concrete substructures on this span.

Passenger safety and preventive maintenance account for the wide use of wrought iron for this new four-mile span.

To safeguard Jamaica Bay Span's substructure against marine elements and alternate freezing and thawing conditions, more than 300 tons of ½-inch thick wrought iron plate protects the concrete piers.

In addition, wrought iron electrical conduit guards power lines and air signal lines against foul weather. Topside, on the bridge structure, wrought iron pipe turns in yeoman service in railing applications. Another 175 tons of wrought iron—angles, clips, nuts and bolts—fasten pier plates and anchor wooden pier fenders.

Write our Engineering Service Department for specific information on wrought iron's ability in these services. A. M. Byers Company, Clark Building, Pittsburgh 22, Pennsylvania.

Designed and constructed under the supervision of the New York Transit Authority Engineering Department

Hardesty and Hanover, Consulting Engineers

American Bridge Company and Merritt-Chapman & Scott, General Contractors

BYERS Wrought Iron Tubular and Hot Rolled Products

ALSO ELECTRIC FURNACE QUALITY STEEL PRODUCTS

Corrosion costs you more than Wrought Iron

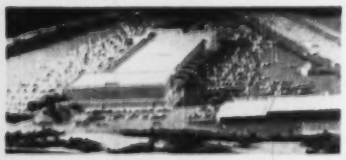
Easy, Proven Way to Permanently Bond New to Old Concrete – for less than 4¢ per square foot!

WELD-CRETE

Weld-Crete is the patented, job-proved liquid bonding agent which enables you to *permanently* bond new concrete, or cement plaster, *directly* to any other structurally sound surface no matter how smooth! No costly, time-consuming surface preparation. Just apply, let dry, and pour or trowel new concrete. Ideal for new construction, remodeling, repairs . . . *ramps, floors, precast shapes, driveways, highways, walls, machine mounts and pads.* Weld-Crete has equal bonding permanence all climates, all surfaces, all sorts of conditions. When used with quick setting cement topping you can lay new floors, ramps, driveways one day and run heavy truck traffic over them the next. Get fact-packed literature from your Building Materials Dealer, see Sweet's File, or write us direct. Address Larsen Products Corporation, Box 57561, Bethesda Maryland.

Typical **WELD-CRETE** Applications

GRANVILLE ST. BRIDGE, VANCOUVER, BRITISH COLUMBIA—One of the largest 8 lane bridges in North America. Here Weld-Crete was applied to bridge surface to bond cement dividing strips. Now, over 4 years later, bonds are as good as new. *General Contractor:* Dominion Bridge Company.



SEVEN CORNERS SHOPPING CENTER, FALLS CHURCH, VIRGINIA—During construction of this 600,000 sq. ft. structure, initially only part of floor was poured and floated to a smooth finish. Areas in which show windows would be added were poured as base slab only. Slab was coated with Weld-Crete. After store fronts were custom-built, delayed toppings of 1" to 1½" thick were poured with assurance of permanent bond to base slab. These toppings were then finished with asphalt tile, wood, or finish flooring of lessee's choice. Designed and constructed by The Kass Realty Co. of the Kass-Berger Organization under direction of J. Franklin Groff. *Concrete Contractor:* Moses-Ekco.

According to Prof. Norman W. Radforth of Hamilton's McMaster University, the new discovery enables developers to "read" what type of muskeg territory exists from aerial photographs taken at altitudes up to 30,000 ft. By analyzing the different types of muskeg, establishing their densities, shear strengths, drainage properties and durability under traffic, and relating these qualities to their appearance from the air, Professor Radforth believes he has put a valuable tool in the hands of developers.

CONCRETE STABILIZERS at work on the runway. Cement is dropped ahead of the machine, which automatically moistens and mixes it with gravel.

NEW 11,000 FT RUNWAY—under construction at a cost of over $10 million—is designed to support 200 ton aircraft.

Australian Airport Gets Added Runway

An 11,000 ft runway with 1,000 ft overruns at each end—capable of carrying the world's heaviest aircraft—is nearing completion at Darwin, Australia. Work is being done by a Royal Australian Air Force construction force of about 400 men at an estimated cost of $10.1 million.

The runway and accompanying taxi strips are designed to carry heavy aircraft, similar to the 200 ton U. S. Air Force B-52. It is planned to open the new runway to air traffic by March or April of 1958. Pavement will be asphaltic concrete, over a soil-cement stabilized base.

All aircraft from the United Kingdom by way of the Middle East, and from Southeast Asia enter Australia through Darwin. Strategic bombers operated by the U. S. Air Force also will be able to land there, and the new installation thus becomes an important factor in Australian defense plans.

TAPER-LOCK SOLID STEEL CONVEYOR PULLEY

1

DRUM DESIGN
— maximum strength
— minimum weight

2

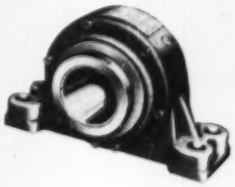
FULLY ENCLOSED
no dust — no dirt — no water

3

SUBMERGED-ARC PROCESS
— full strength in all welds

4

TAPER-LOCK BUSHING
— no walking on shaft
— easy on — easy off!



DODGE-TIMKEN ALL-STEEL PILLOW BLOCK

5

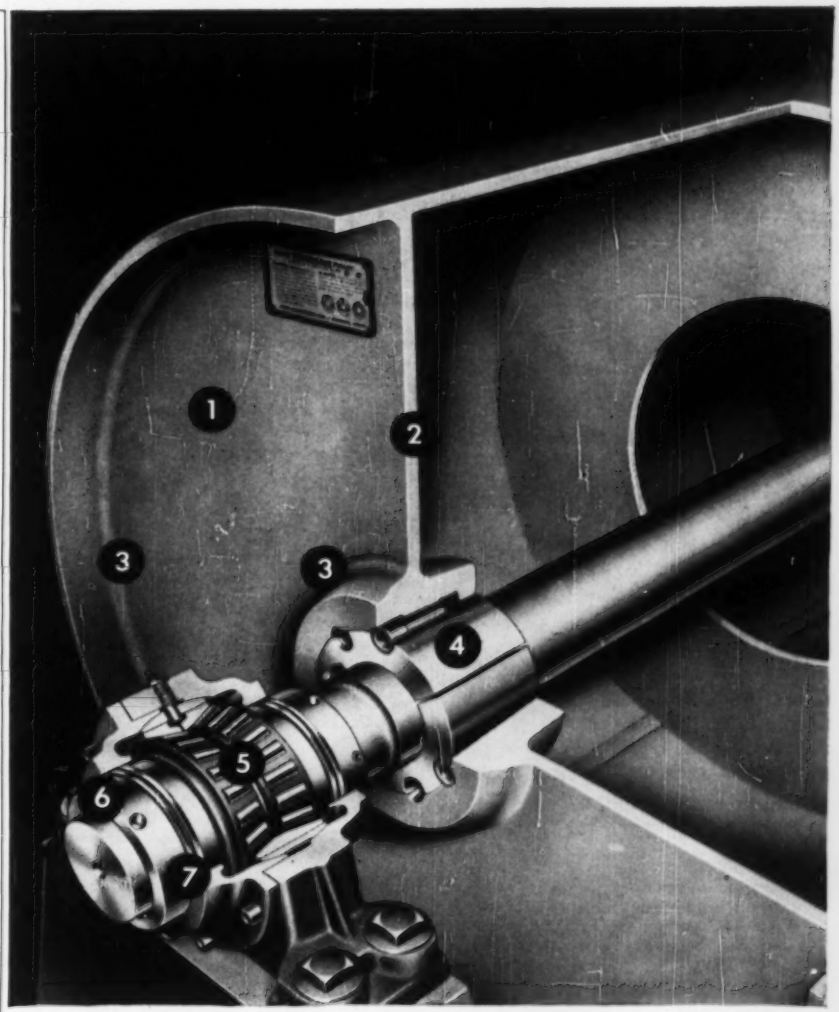
NEW HEAVY-DUTY TIMKEN ROLLER BEARINGS
— fully self-aligning

6

HEAVY-DUTY ADAPTER MOUNTING

7

Sealed both on and off the shaft with DOUBLE PISTON RINGS



Here's a heavy-duty combination for tough conveyor jobs!

Pulleys from 6 in. to 8 ft. in diameter, all face widths. Bearings from 2 15/16" to 10" bores. Popular sizes stocked by our Distributors. Write for detailed information.

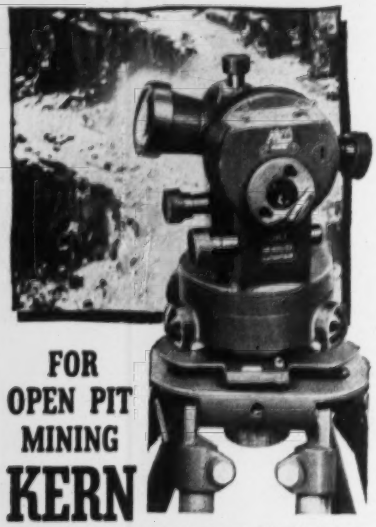
DODGE

of Mishawaka, Ind.

Call the Transmissioneer, your local Dodge Distributor. Factory trained by Dodge, he can give you valuable assistance on new, cost-saving methods. Look for his name under "Power Transmission Machinery" in your classified telephone directory, or write us.

DODGE MANUFACTURING CORPORATION, 6900 UNION STREET, MISHAWAKA, INDIANA

KERN INSTRUMENTS
RIGHT
for the JOB



FOR
OPEN PIT
MINING
KERN
DKI THEODOLITE

Down-to-fundamentals design ... made for portability, rugged use ... Precision results in simplest, quickest way.

Only 6 lbs. in weight, 7" high, including carrying case.

READINGS at a GLANCE

- Fast, effortless operation.
- Direct to 10', Estimation to 1'.
- Automatically gives arithmetic mean of two readings at opposite circle points

FOR UNDERGROUND OPERATION

- Illuminated Traverse Targets easily interchanged with instrument.
- Water and dust-proof.
- Exceptional clarity of optical system—50% brighter image through Kern AR coating.

★

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FACTORY TRAINED PERSONNEL
KERN and ONLY KERN
OFFERS YOU
the LATEST DESIGNS of
Dr. Henry WILD

Kern SWISS
The FINEST in SURVEYING EQUIPMENT
KERN INSTRUMENTS INC.
120 Grand St., White Plains, N.Y.

Men and Jobs

Health Officer Mattison Leaves Pennsylvania Post

Berwyn F. Mattison, who since being appointed Pennsylvania State Health Secretary in 1955 has pushed the state's stream anti-pollution program, has resigned his post to become executive secretary of the American Public Health Association in New York City.

Prior to his Pennsylvania position, he was Buffalo City Health Director.

Charles L. Wilbar Jr., deputy health secretary since 1953, succeeds to the Pennsylvania secretaryship at a salary of $20,000.

Hathaway, Giroux Receive Army's Highest Award

Two eminent retired special assistants to the Army Chief of Engineers, Gail A. Hathaway and Carl H. Giroux, have received the Army Exceptional Civilian Service Decoration. This is the Army's highest award for civilian personnel.

Mr. Hathaway, famed as a hydraulician and a former president of ASCE, is now an engineering consultant to the International Bank for Reconstruction & Development in Washington, D. C. Mr. Giroux, an outstanding electrical engineer, is now Director of Industrial Resources with the International Cooperation Administration.

Careers

Business

Maurice L. Albertson, professor of civil engineering, will become director of the Colorado University Research Foundation, effective Jan. 1, 1958. The foundation, chartered in 1941, conducts research projects financed by outside sponsors.

Wallace H. Gloss has been elected a vice president of Timber Engineering Co., Washington, D. C.

Frederick H. Elias has been appointed construction coordinator of Sam Minskoff & Sons, Inc., New York City builders.

Frederick C. Limbert has been admitted to partnership in the firm of Samborn, Steketee & Associates, J. H. V. Evans, engineers and architects of Toledo, Ohio.

Arthur W. Davenport has been named project manager for Stone & Webster Engineering Corp. on its work in Sao Paulo, Brazil.

N. Jack Huddle, architect, has been made an associate of the office of Robert A. Little & Associates, Cleveland architectural firm.

Lawrence F. Shaffer has established an office in Decatur, Ill. as a consultant in civil engineering.

David M. Greer of Greer Engineering Associates, Montclair, N. J., and **G. Kenneth Jewell,** consulting engineer, of Columbus, Ohio, have formed a partnership for the practice of civil engineering under the name Greer-Jewell & Associates, in Columbus.

Harry Oedekerk and **Trevor Gardner** joined the board of directors of Tuttle Engineering, Inc., of Arcadia, Calif.

David F. Shaw was elected a vice president of Henry J. Kaiser Co. He will be with the Kaiser Engineering Division.

Leo A. Porter has been named chief bridge engineer for the Capital Engineering Co., Guildsburg, Pa.

Eugene S. Gibbons has been appointed district manager of the Philadelphia office of Raymond Concrete Pile Co.

William E. Burroughs, consulting engineer, has opened a new office in Philadelphia.

Jackson K. Lightfoot has been appointed chief engineer of the Missile Products Division, Beckman & Whitley, Inc., San Carlos, Calif.

Jerome A. Petronio, design engineer in the Engineering Department of E. I. duPont de Nemours & Co., has retired after 18 years with the company.

The firm of **Herbert L. Kartiganer,** consulting engineers and designers, has opened an office at Newburgh, N. Y.

William G. Brownie was promoted to director of construction management in the planning, architectural and engineering firm of Pereira & Luckman, Los Angeles. **G. W. Coleman** was appointed assistant director of engineering. **John T. Stofko** was appointed director of administration in the New York City offices of the company.

Alfred Abboud has been elected vice president of Kaighin & Hughes, Inc., industrial piping and mechanical contractors, Toledo, Ohio.

Joseph C. Webber has joined Finkbeiner, Pettis & Strout, Toledo, Ohio, engineering firm, to create a department of highways and pavements.

Thomas A. Kelly has been named chief engineer estimator for George W. Lathrop & Sons, Inc., Toledo, Ohio.

Marvin J. Kudroff has been appointed director of engineering for Daniel, Mann, Johnson & Mendenhall, architects and engineers, Los Angeles.

Richard E. Brodhead has been named chief structural engineer for the Dresser-Ideco Co., Columbus, Ohio.

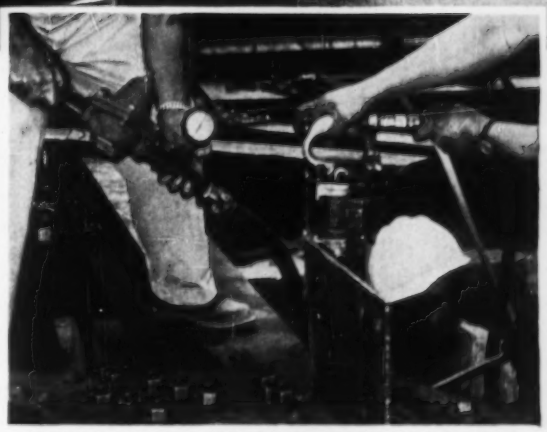
BOLTED CONSTRUCTION IS "GOING UP" EVERYWHERE

in MINNEAPOLIS . . .

major steel frame buildings erected since 1950 are exclusively HIGH STRENGTH BOLTED

SOME record. Since the first high strength bolted building went up in 1950, all major steel frame construction in Minneapolis has used this new technique. Significant structures include the Mayo Memorial Hospital, and the Minneapolis Health Center. Ahead: the proposed, 29-story First National Bank Building.

This acceptance of bolting is plain to understand. Using one bolt for each rivet (as approved by AISC) gives greater connection strength; quicker erection with more safety and less noise. Everybody benefits – contractor, owner, community.



Torqued to optimum tightness, high strength bolts give greater connection strength than rivets.

RB&W . . . largest independent producer of high strength bolts for construction

RB&W high strength bolts are making a major contribution to the success of this construction technique. Conforming to ASTM A325 standards, they assure permanently tight joints and complete reliability in buildings, bridges, plants.

Look for the "E" and three radial dashes on bolt head, three concentric dashes on nuts to insure yourself strong, uniform, easy-assembling fasteners for construction

Send for free bulletin on how to work with high strength bolts. Or see the RB&W Catalog in Sweet's File. Russell, Burdsall & Ward Bolt and Nut Company, Port Chester, New York.

RB&W

112th year

Plants at: Port Chester, N. Y.; Coraopolis, Pa.; Rock Falls, Ill.; Los Angeles, Calif. **Additional sales offices at:** Ardmore (Phila.), Pa.; Pittsburgh; Detroit; Chicago; Dallas; San Francisco. **Sales agents at:** Milwaukee; New Orleans; Denver; Fargo. **Distributors** from coast to coast.

GUESS WHAT'S GOING UP HERE!

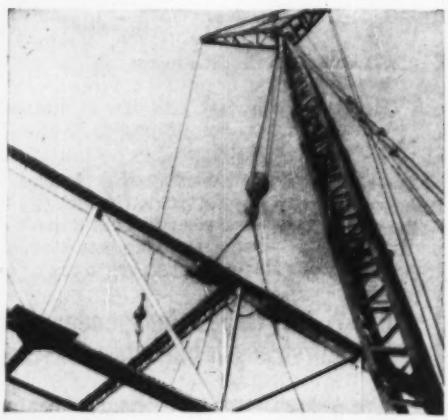
☐ Office Building ☐ Warehouse ☐ School
☐ Factory ☐ Store ☐ Hospital

Happens to be a school building, but any other guess would be no reflection on your good judgment.

For Sheffield Open Web Steel Joists speed construction and cut costs in *every* type of building. Versatility is their middle name. They come in longspan and shortspan sizes. Their structural and design possibilities are as high, wide and handsome as the imaginations of architects, engineers and contractors.

Sheffield Steel Joists combine strength and light weight for any type of floor, roof and ceiling. They're quickly installed and furnish support for a working platform right away. The underslung, open web design allows fast placement of pipes, conduits and ducts. Other trades can begin work promptly. The need for slow, expensive falsework is eliminated entirely. And the light weight of Sheffield joists makes possible lighter construction of columns, walls and foundations with full strength rating.

Learn more about how these advantages can be turned to your benefit. Get in touch with your nearest Sheffield office.



Going up . . . faster: Sheffield joists are easily handled, quickly installed. They're quickly available, too — thanks to Sheffield's strategic locations.

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ARMCO®
Open Web
STEEL JOISTS
Standard and Longspan

SHEFFIELD DIVISION ARMCO STEEL CORPORATION SHEFFIELD PLANTS: HOUSTON • KANSAS CITY • TULSA

Obituaries

William R. Putnam, 81, consultant and former director of Ebasco Services, Inc., died November 13 in Bronxville, N. Y. Mr. Putnam graduated from the University of Minnesota in 1897. He was, during his career, executive head of the Idaho Power Co., first president of the Minnesota Electric Assn. and president of the Northwest Electric Power and Light Assn. He retired from Ebasco in 1949 after 20 years as general consultant and director of the company.

James F. Kaufman, 65, former chief engineer for Ideal Cement Co., died November 26 in Little Rock. He designed several of the company's plants before he left its employ in 1948. Later, he was construction engineer for the Arkansas Board of Health, Division of Hospitals, at Little Rock until he resigned that post in 1955.

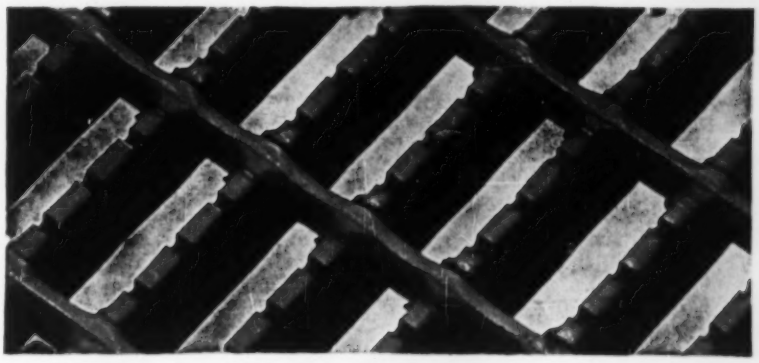
L. J. Brannon, 57, for 22 years field engineer for the Ohio Highway Department Bureau of Construction, died December 1 in Columbus. Serving nearly 40 years with the department, he had most recently been division engineer at Middletown.

A. Burton Stanhope, 61, president of the Delaware Board of Examiners and Registration for Architects, died December 5 in Wilmington. Mr. Stanhope, a Delaware architect, received a civil engineering degree from the University of Cincinnati in 1918.

Edgar F. Robinson, who retired in 1944 after 48 years of service in engineering departments of eastern railroads, died November 27 in Rochester, N. Y. Some 41 years of his career were spent with the Buffalo, Rochester & Pittsburgh Railroad. He also served as assistant to the chief engineer of the Baltimore & Ohio Railroad.

William Easby, Jr., 95, retired civil engineering professor formerly at the University of Pennsylvania, died December 2 at Drexel Hill, Pa. Mr. Easby, a former president of the Engineers Club of Philadelphia, was a graduate of Rensselaer Polytechnic Institute in 1890. While at the University of Pennsylvania he designed and supervised the building of its hydraulic laboratory. After retiring in 1918 he served as a special lecturer at Drexel Institute of Technology.

Kenneth L. Chrysler, 63, city engineer for Lewistown, Mont., died November 15. He had held this post since May.



New Slip-Proof Design makes

Gary SERRATED GRATING safest

WHERE GOOD TRACTION IS IMPORTANT

Indoors or out, for area gratings in sidewalks, inclined walkways, fire escapes—wherever safe-footing is important, this one-piece, resistance-welded grating will provide safer working conditions. It's tailor-made to your requirements. Write for descriptive Catalog E-127

FREE SAMPLE
We'll send this handy paper weight if you request it on your company stationery.

ROCKWELL SPRING & AXLE CO.
GARY GRATING DIVISION
4004 EAST SEVENTH AVE., GARY, INDIANA

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(Predraining Problem)

GET THIS!
(Skilled Wellpoint Engineering)

From

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881 East 141st Street, New York 54, N. Y.
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CAPACITY
SACHSE ELECTRIC INC.
BATON ROUGE LA

DUDGEON HYDRAULIC JACKS
SALES RENTALS
• CAPACITY TO 600 TONS
FOR:
PILE TESTING
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BRIDGES
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PIPE PUSHING
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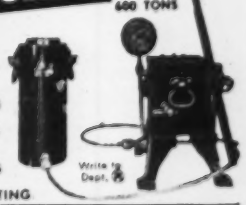
SOIL TESTING



RICHARD DUDGEON INC.
709 BERGEN ST. • ST 9-4040 • BROOKLYN, N. Y.

Concrete Pipe Sewers for Seattle

Six contracts total $1,597,288 for the laying of 33¼ miles of sanitary sewers in the Lake City Sewer District, Seattle, Wash.

This is 13.4% below the estimate of the engineers, Hill & Ingman of Seattle, Wash.

These contracts are part of a $17-million project.

Concrete sewer pipe is specified, new ASTM C 76-57T where reinforced, C 14 extra strength where not, all with rubber joints. Alternate bids for centrifugally formed vs reinforced concrete sewer pipe were submitted on Section II of the North Trunk sewer, and Contracts A II and B I. Awards are for alternate A, centrifugally formed pipe, in each instance.

The contractors supply all materials. Prices on excavation and backfill, by size of pipe, are shown per lin ft of trench.

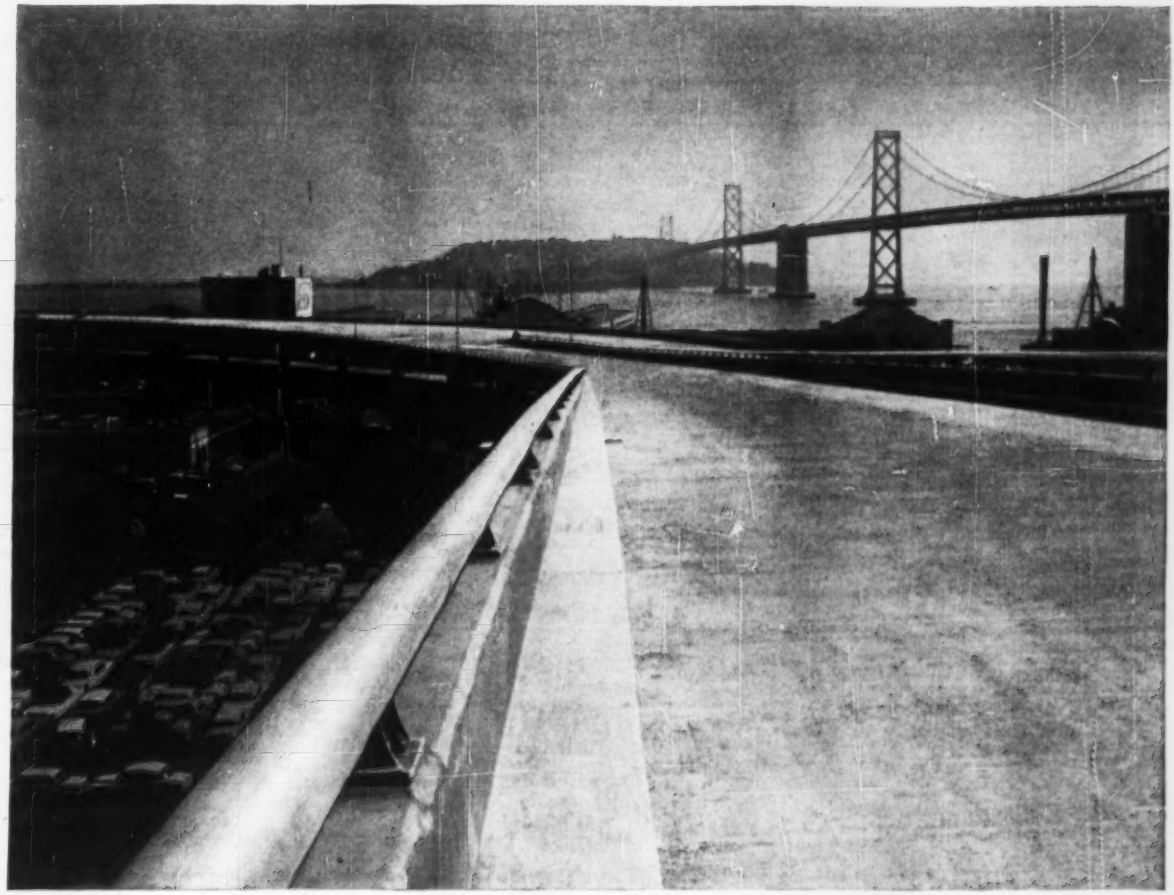
Wages prevailing in the Seattle area include: carpenters $3.04; tractor operators $3.30; common labor $2.61, all including fringe benefits.

Bidding went like this:

North Trunk	Sect. I	Sect. II Alt A	Sect. II Alt B
1C West Coast Constr Co., Seattle	$82,471	$197,454	$195,307
2 Harold Kaeser Co., Seattle	125,831	223,345	219,086
7 Frank Collucio Const. Co, Seattle	124,569	350,898	
Contract A I			
1C Hanson Constr Co., Seattle			$247,431
2 Matt Malaspina, Seattle			268,485
4 Frank Collucio Const. Co., Seattle			298,253
Contract A II		**Alt A**	**Alt B**
1C Matt Malaspina, Seattle		$339,766	$338,497
2 Harold Kaeser Co., Seattle		353,267	353,182
4 Frank Collucio Const. Co., Seattle		409,733	409,733
Contract B I		**Alt A**	**Alt B**
1C Valley Constr Co. M-K, Seattle		$174,606	$174,606
2 Joe Lundberg Const Co., Seattle		191,457	190,559
6 Harold Kaeser Co., Seattle		241,309	241,309
Contract B II			
1C Murphy Bros., Inc., Spokane, Wash			$245,605
2 Harold Kaeser Co., Seattle			268,585
6 Lario Libri Const, Seattle			296,175
Contract B III			
1C Valley Constr Co. M-K, Seattle			309,955
2 Lario Libri Const Co., Seattle			312,473
5 Harold Kaeser Co., Seattle			321,166

		North Trunk Section I		Section II Alt A		Alt B	Contract A I		Contract A II Alt A and B		Contract B I Alt A and B		Contract B II		Contract B III	
Bids 6-10,13, 17, 20,24 Items	Unit	Quantity	Unit Prices 1C	Quantity	Unit Prices 1C	Unit Prices 1C	Quantity	Unit Prices 1C	Quantity	Unit Prices 1C	Quantity	Unit Prices 1C	Quantity	Unit Prices 1C	Quantity	Unit Prices 1C
Manholes, std	ea	25	$250 00		$	$	136	$225 00	122	$300 00	69	$285 00	95	$280 00	121	$275 00
trunk	ea	32	380 00													
drop	ea						2	400 00	4	540 00	1	490 00	3	500 00	5	517 00
extra depth	lf	115	20 00				250	15 00	300	20 00	150	20 00	300	20 00	310	22 00
Gravel, bedding	cy	1000	5 00				1000	3 25	1000	4 10 00	500	8 00	1000	5 00	1000	5 75
Xing, jack or tunnel	lf								292	66 00						
pavement	lf	195	100 00				30	50 00							56	70 00
Conc encasement	cy	25	50 00								3	65 00				
Crushed minus, ¾"	cy										1600	3 90	2800	4 50	3200	4 10
1½"	cy										2700	3 90	4800	4 50	5400	4 10
Ledge rock, minus cr ¾"	t	750	4 00				8000	3 50	4500	4 80						
Borrow, select pit run	cy	*500	3 00				100	2 75	50	9 75						
Embedment	cy								10	70 00						
CIP, MJ CI 150, 12" f&p	lf	545	7 00													
exc & bkfl	lf	545	3 50													
CP, sewer, rubber jt type																
15" f&p	lf										880	4 90	3330	4 00	670	6 05
exc&bkfl	lf										880	4 00	3330	4 00	670	11 50
12" f&p	lf						575	4 38								
exc&bkfl	lf						575	2 78								
10" f&p	lf						220	3 10			1500	3 35			610	3 85
exc&bkfl	lf						220	2 78			1500	4 00			610	7 57
8" f&p	lf	2000	2 00				33100	2 05	26600	2 70	12200	2 75	26300	2 00	32200	2 88
exc&bkfl	f	2000	2 75				33100	2 78	26600	2 70	12200	2 80	26300	3 30	32200	2 92
6" f&p	lf	115	2 00				250	1 75	325	1 80	375	2 00	530	1 50	660	2 30
exc&bkfl	lf	115	2 35				250	2 78	325	2 65	375	3 00	530	2 00	660	2 92
18" f&p	lf								4230B	9 00	2640Br	6 40				
exc&bkfl	lf								4230B	6 70	2640Br	6 60				
18" f&p	lf			200r	8 75c	6 75			4230A	9 30c	2640Ar	6 40c				
exc&bkfl	lf			200r	4 00c	4 00			4230A	6 70c	2640Ar	6 60c				
30" f&p	lf			5515r	14 50c	14 25										
exc&bkfl	lf			5515r	12 82c	12 82										
EH 30" f&p	lf			1475r	16 00c	15 75										
exc&bkfl	lf			1475r	12 82c	12 82										
CI, MJ 8" f&p	lf	1550	4 35				180	4 00	800	5 70	365	5 15			500	5 92
exc&bkfl	lf	1550	3 00				180	4 00	800	2 65	365	6 00			500	6 33
4" f&p	lf	53	11 24													
exc&bkfl	lf	53	10 00													
Wyes, conc 6" on 8"	ea	55	4 00				825	2 50	650	5 00	320	3 00	800	4 00	903	3 45
6" on 10"	ea						6	3 50			40	4 00			12	4 60
6" on 12"	ea						16	9 00								
6" on 15"	ea										25	8 50	90	8 00	12	9 78
6" on 18"	ea			3	15 00	15 00			50	20 00	55	9 80				
6" on 30"	ea			56	30 00	30 00										
CI 6" on 8"	ea	14	80 00						12	81 25	4	80 00				
6" on 12"	ea	2	200 00													
Timber bkfl support	ea	85	18 00				8	20 00	85	15 00	65	22 50			92	20 13
Lift station modification	ls														lob	1092 50
deactivation	ls												lob	500 00		
MH, connection to existing	ea														5	149 50
Dust oil-fuel oil 300 wt	bbl						275	5 50	100	12 50						
Asph pl mix surf	sy						3000	2 50	3000	5 25						

* In trench A Alt A B Alt B c Centrifugally formed concrete sewer pipe r reinforced concrete sewer pipe



San Francisco Embarcadero Freeway; General Contractors, Charles L. Harney, Inc.; Railing Fabricator and Erector, Beaumont Furnace and Sheet Metal Corp., San Francisco.

KAISER ALUMINUM RAILINGS CUT COSTS ON NEW SAN FRANCISCO FREEWAY

By offering important money-saving advantages over other materials Kaiser Aluminum railings are paying off on the new Embarcadero link of San Francisco's freeway system. Here's where the savings add up:

Economical fabrication and erection—Because they weigh so much less and weld so efficiently, Kaiser Aluminum railings are far easier to work with—go up fast at minimum expense on any job.

Sharply reduced maintenance—Railings of Kaiser Aluminum resist corrosion—will not rust or warp—keep their attractive appearance for years and years without costly painting or care.

Beaumont Furnace and Sheet Metal Corporation, San Francisco, who fabricated and installed these railings, report that handling went much faster than usual—both at their shops and in the field. That's because a 10-foot extruded section of Kaiser Aluminum weighs only 43 pounds, a full 132 pounds less than its counterpart in steel. Welding was quickly and efficiently done.

These facts point up some of the ways Kaiser Aluminum highway products are cutting costs and speeding work on highway projects across the country. Find out how these products can save *you* money. Send for our free brochure now!

Free brochure on request.

Gives full details on Kaiser Aluminum's complete line of highway products—including railings, sign blanks, extruded highway signs and accessories. Contact your nearest Kaiser Aluminum sales office for your free copy. Or write Kaiser Aluminum & Chemical Sales, Inc., Highway Sales Dept., 919 N. Michigan Ave., Chicago 11, Illinois.

KAISER ALUMINUM THE BRIGHT STAR OF METALS

See "MAVERICK" • Sunday Evenings, ABC-TV Network • Consult Your Local TV Listing

Materials and Labor Prices

Monthly Market Quotations by ENR Field Reporters

See following ENR issues for OTHER PRICES

- Cement, Aggregate, Ready-mixed Concrete, Asphalt: Last, Dec. 5; Next, Jan. 9
- Iron and Steel Products, pipe: Last, Dec. 12; Next, Jan. 16
- Wood Products, Glass, Explosives, Chemicals: Last, Dec. 19; Next, Jan. 23
- Wage Rates, Building Board, Lath, Insulation: Last, Nov. 28; Next, Jan. 2

STRUCTURAL CLAY BUILDING TILE, BRICK AND LIME—DELIVERED

	STRUCTURAL CLAY TILE PARTITION—SCORED Per M. lots of 2,000 pieces or over,			STRUCTURAL CLAY TILE—LOAD BEARING—SCORED Per M. lots of 2,000 pieces or over,			BRICK Per M. in quantity		LIME Per ton, in paper, Carload lot,		
	3x12x12 in.	4x12x12 in.	8x12x12 in.	8x12x12 in.	10x12x12 in.	12x12x12 in.	Common backing	Straight hard	Hydrated finishing	Common hydrated	Pulverized or lump
Atlanta	$149.90p	$149.90p	$299.80p	$334.55p	.....	.....	$30.50p	$32.70p	$23.50	$24.50	$.....
Baltimore	203.00	217.00	406.00	485.50	596.00	681.00	36.00k	41.00k	33.00	22.00	.....
Birmingham	135.00p	152.00p	.....	303.00p	376.00p	465.00p	27.00ff	38.00y	35.02	22.30	26.33g
Boston	232.00†	348.00†	463.25†	556.00†	.....	.....	41.50p	46.50p	39.20†	31.20†	.....
Chicago	135.00	145.00	280.00	.....	.....	.....	30.00	32.00	38.00	35.20o	.....
Cincinnati	205.00j	225.00j	296.00jdd	213.00j	288.00j	314.00j	45.75j	47.00j	30.04j	26.04j	30.04j
Cleveland	209.00	223.00	.....	475.00	.....	.....	41.00	51.50	31.00	25.00	.....
Dallas	152.00	152.00	300.00	364.50	446.25	552.50	27.00	45.25	42.50	24.58	28.85
Denver	.....	.....	.....	.....	.....	.....	31.50	49.50	46.00p	42.00p	46.00p
Detroit	273.00	298.00	545.00	.....	662.00	755.00	47.50p	48.00p	38.00	30.00	.....
Kansas City	158.00	158.00	312.00	312.00	400.00	500.00	33.00	33.00	36.26	34.26	29.76
Los Angeles	r	r	r	r	r	r	32.50§	.....	38.00	38.00	39.00
Minneapolis	188.00p	210.00p	429.00p	210.00pe	.....	.....	43.00ep	52.50y	47.00bbe	37.00bbe	49.00bbda
Montreal	170.00av	178.00av	326.00avs	270.00g	400.00g	.....	42.00b	56.30b	39.00	22.00	13.25
New Orleans	186.00	186.00	380.00	380.00	.....	.....	40.00	55.00	44.00	32.00	32.00P
New York	175.30A	187.00A	280.40ch	293.00An	.....	.....	44.00	.....	38.00	35.00	.....
Philadelphia	169.00	180.20	337.90	405.00	.....	.....	30/34	38/42	27.60	25.60	3.17m
Pittsburgh	147.50t	157.75t	295.00t	335.00t	435.00t	500.00t	39.00t	46.00t	32.00t	28.00t	.....
St. Louis	178.50p	185.00p	391.00p	401.00p	459.00	621.50	43.00l	41.50	0.95aa	.80aa	1.35s
San Francisco	156.55*	177.10*	235.30dd*	.....	.....	.....	43.00*	43.00*	27.75	27.75	30.50i ¶
Seattle	225.00p	250.00p	450.00p	250.00pw	.....	.....	43.00	57.00	52.00bb	38.00bb	4.50mbb¶
Toronto	146.00	157.00	289.00	234.00jf	395.00	.....	35.00	63.00	36.00	33.50	31.50

*† F.o.b. Yard. **• F.o.b. plant Stockton. *† F.o.b. yard Roxbury. *a Smooth. *b $4.50 del. *c 8 x 12 x 12 in.-3 cell. *d Pulverized hot. *e 8", 10th following month. *f 8 x 8 x 12. *g Lumps, $26.72. *h F.o.b. trucks, job site N.Y.C. *i 60 lb sacks. *j Truck load or over. *k $1.00 discount. *l Red face. *m Per bbl., 180 lb. processed. *n 7¾ x 7¾ x 12. *o Mason's double hydrated pressure. *p Truck lots. *q Provincial and Municipal tax extra. *r Not used: earthquake danger. *s 8 x 16 x 12. *t 2% cash. *u Incl. Federal tax. *v Sand lime. *w 5 x 8 x 12, 8 x 8 x 12. *x Chi common. *y Pebble: 80 lb sack. *aa 50 lb sack. *bb LCL. *cc 8 x 12 x 12. *dd 80% common. *ee Rough. $40.00 smooth. *ff 8 x 12 x 12.

PAINT, ROOFING—F.O.B. CARLOAD LOTS

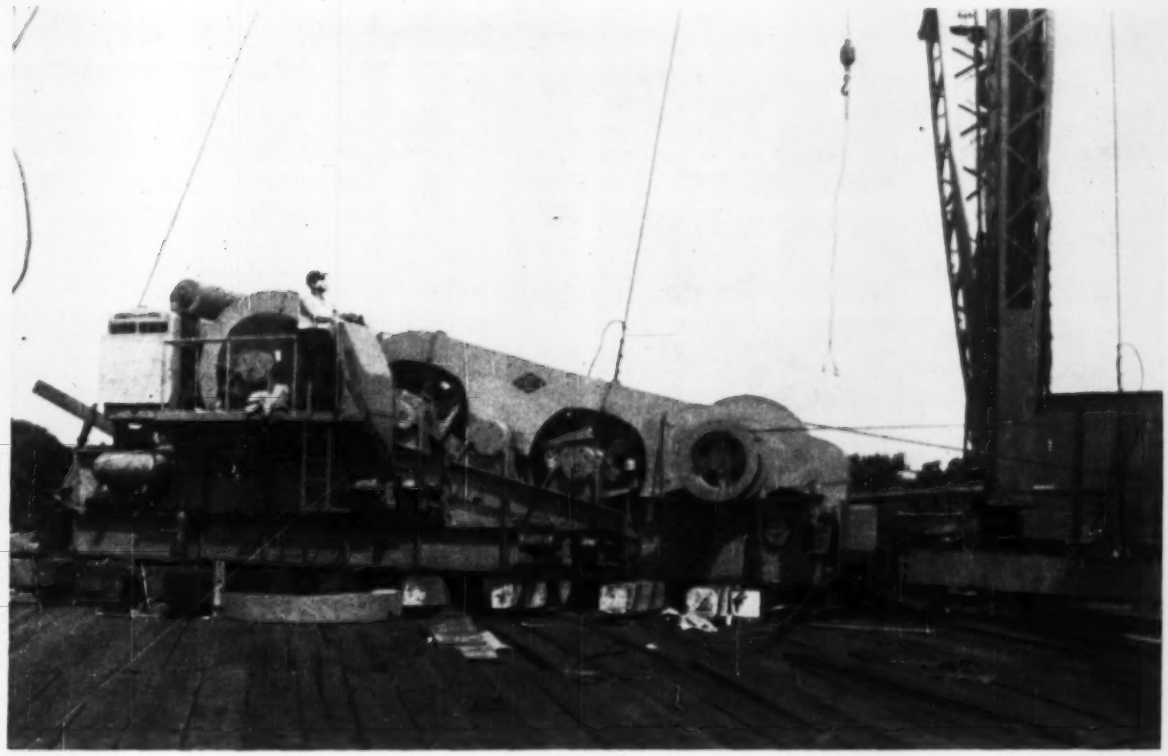
	RED LEAD Per 100 lb. in 600-lb. (Approx.) bbl. Dry a	WHITE LEAD Per 100 lb. in 100 lb. cases In oil w	READY-MIXED PAINT Per gal., drums Graphite b	Aluminum c	Ferric Oxide d	ROOFING SUPPLIES; Carload lots f.o.b. factory Rolls, slate surfaced, 85–90 lb. per sq.	Asphalt felt, per 100 lb.	Tar felt, per 100 lb.	Asphalt coating per gal.	Tar pitch 360 lb. bbl. per ton
Atlanta	$16.50	$30.125	$3.50	$3.85	$3.31	$3.39	$2.20	$2.62	$0.67	$57.75
Baltimore	16.25	29.75	3.00	4.40	3.50	2.78	4.25	4.25	.48	50.18
Birmingham	16.50	30.125	3.90	5.40	....	3.09	2.29ei	2.29ei	.82ff	45.00aa
Boston	16.25	29.75	....	....	....	3.63gg	2.83eg	2.83eg	.50g	58.00g
Chicago	16.25	29.75	....	....	....	3.60¶u	2.98¶e	2.98¶e	46.00¶bb	57.70¶
Cincinnati	16.25	29.75	....	....	....	3.13	2.70	2.73	.428y	55.96
Cleveland	16.25	29.75	2.54pos	2.82gj	2.95gg	3.73g	2.85e	2.85e	.501y	49.00gg
Dallas	16.50	30.50	....	3.20B	....	3.00e	3.00e	3.00e	.464	65.00AA
Denver	16.75	30.25	3.98	5.20	3.70	2.63	2.50e	2.40e	.418f	50.00
Detroit	16.25	29.75	2.70	3.95	2.70	3.30	2.54f	2.409f	.582¶f	47.30
Kansas City	16.25	30.50	3.94	3.38	2.96	3.42ii	2.62e	2.62e	.661y	.....
Los Angeles	16.25	30.00	3.30m	4.50m	4.30m	3.20m	2.15m	l	.70my	l
Minneapolis	16.25	29.88/29.75	....	....	....	2.99	2.41hi	2.41hi	.442i	50.00r
Montreal	.....	.....	5.09Dgfl	5.94xgfl	4.65kgfl	5.40	4.65f	4.65f	1.60	....
New Orleans	.....	.....	....	....	....	3.09	2.29	2.85	0.680	.....
New York	15.25t	29.75	....	....	....	3.19	2.45e	2.45e	.425e	49.00*
Philadelphia	16.25	29.75	3.60	3.40/3.65	3.50/4.60	3.00/3.30	2.54e	2.54e	.37/.45	48/54
Pittsburgh	16.25	29.75	2.10EF	2.25gF	2.25gG	3.37s	2.59e	....	.45	.....
St. Louis	16.25	29.75	....	....	....	3.70kks	2.75kk	2.75kk	.46y	64.00
San Francisco	16.25	30.00	3.20	4.30	3.50	2.69	2.09aa	3.10	.47jj	54.00
Seattle	16.25	30.25	....	4.19ee	....	3.82qee	3.30kec†	....	.50ee	51.40ee
Toronto	.....	.....	....	....	....	4.48	4.45e	4.65o	1.70j	88.00A

*† Delivered. * Note: Red lead in oil 50% higher than white lead in oil. **• Aver. wt. approx. 425 to 550 lb drums. *a Red lead prices change frequently due to pig lead price changes. *b U.S. War Dept. Spec. 3-49A. *c ASTM Spec. D266-31. *d 80% minimum ferric oxide. *e 15 lbs. *f Per 432 sq ft. *g F.o.b. yard, Roxbury. *h Per roll, 65 lb. *i Net carload prices, Minneapolis and vicinity. *j 45 gal containers. *k Over 80% ferric oxide. *l Not used. *n F.o.b. city. *o Per 60 lb roll. *p 6-drum, 50 gal each. *q Per 90-lb roll. *r F.o.b. factory, Chicago. *s Truckload. *t Incl. Federal tax. *u Per 90-lb square. *v Per ton. *w Price to contractors $1.25 less. *x Ready-mixed. *y 55-gal container. *z Drums. *aa 15 lb. sq ft. roll. *bb Roofers coating and cement. *cc LCL, truck delivery. *ee Asphalt pitch in 100 lb package. *ff 5-gal drums. *gg F.o.b. factory. *hh Incl. freight. *ii Per roll. *jj Asbestos roof coating. *A 400 lb barrels. *B ASTM Spec. D962-49. *C 95%. *D Std. black. ‡ Milt. spec.: E TTP27; F TTV81; G TTP31. *H Not quoted after Oct. 1957

PLASTER, VERMICULITE AND METAL BUILDING SHEETS & TUBING

	PLASTER† Neat per ton	PLASTER† Gauging per ton	VERMICULITE† Home Insulation pellets per bag of 4 cu ft	VERMICULITE† Plaster aggregate per bag of 4 cu ft	VERMICULITE† Concrete Aggregate Untreated per bag of 4 cu ft	PERLITE† Plaster Aggregate	PERLITE† Concrete Aggregate Untreated	ALUMINUM SHEET†† Flat .102" th 36"x96" & 48"x144" per lb/t	ALUMINUM SHEET†† Corr roof .032" th 35"x12' per sho	STAINLESS STEEL† SHEET-TYPE 302g 20 ga 48"x96-120" per cwthh	STAINLESS STEEL† SHEET-TYPE 302g 28 ga 36"x120" per cwtmm	COPPER WATER* TUBING-TYPE L 2000 ft lots per ft ½"b	COPPER WATER* TUBING-TYPE L 2000 ft lots per ft ¾"e
Atlanta	$31.00	$36.00	$1.55s	$1.65s	$1.80sl	$1.65	$1.65	$0.422n	$8.97n	$61.44n	$67.50	$16.74f	$23.41f
Baltimore	23.25	33.65	0.95	1.15	1.15	1.15	1.65	0.431	0.489r	56.25	64.25	0.1674	0.2341
Birmingham	33.00	39.00	1.55	1.55	1.80l	1.55	1.55	0.466	10.48	67.34	76.09	0.1608	0.2249
Boston	22.00	30.00	1.40	1.40	1.45	1.45	1.50	0.438	30.10p	65.42dd	71.92ddff	0.1608	0.2244
Chicago	26.80	26.80	1.55	1.60	1.60l	1.60	1.60	0.506z	10.376a	65.15aee	73.90aee ¶	0.1608	0.2244
Cincinnati	28.00*	28.00*	1.75	1.75	1.75	1.85	1.90	0.434	9.56	65.03	71.28ff	0.1556	0.2171
Cleveland	26.50	43.00	1.13k	1.16kl	1.24l	1.45	1.45	0.506aa	8.68	65.33oo	74.08oo	16.08f	22.44f
Dallas	30.00	32.00	1.05	1.21	1.37l	1.21	1.32	0.474	0.5100r	66.59	80.00	0.200	0.2810
Denver	25.00	25.00	1.50	1.40	1.50	1.40	1.55	0.462	10.37	66.30gg	75.05gg	0.1804	25.21
Detroit	25.00	25.00	1.28	1.32	1.41	1.45	1.45	0.456a	10.376a	65.15a	73.90a	13.75f	24.50f
Kansas City	30.00	35.00	1.14	1.26	1.26l	1.18	.....	0.444	11.40	67.50	76.25	16.08f	22.44f
Los Angeles	26.00	27.00	1.25k	1.20k	1.25	1.00	1.10	0.506	10.543d	67.10	75.85	0.1608	0.2244
Minneapolis	33.00	33.00	1.55	1.60	1.80	1.40	1.40	0.503	15.15w	68.21	74.71ff	0.1556	0.2171
Montreal	27.60A	35.60A	1.20	1.40	1.50	1.15v	1.15v	0.437	9.92	66.50	.....	0.1827	0.2160
New Orleans	32.00	45.00	1.25	1.25	1.25	1.25	1.25	0.444	8.786	68.00	76.00	0.1591	0.2222
New York	24.20	30.20	1.35	1.30	1.50	1.40	1.40	0.506a	10.14ad	68.58	77.33	16.08f	22.44f
Philadelph'a	23.25	32.00	1.35	1.35	1.40l	1.05	1.05	0.44av	9.46a	66.68a	75/77a	20.00f	28.75f
Pittsburgh	28.00an	28.00an	1.60an	1.50an	1.35	1.50	1.65	0.456	9.83	64.00	72.75pp	0.1419	0.1980
St. Louis	29.00	40.00	1.35	1.60ff	1.55	1.60	1.60	0.456	10.37	70.86	77.36y	15.91m	22.22m
San Francisco	27.85	32.00	1.20	1.20	1.30	1.20	1.30	0.505	9.13	65.20	73.75	0.1608	22.44
Seattle	41.00	44.00	1.55	1.25k	1.85l	1.50k	.....	0.506	9.964	67.08	88.08	0.1608	0.2244
Toronto	28.00	45.50	1.20	1.30	1.45l	.....	1.55	0.4095	24.00ae	73.74	86.52	0.2562	0.3029p

†trucklots, delivered ††fob warehouse *fob city *a delivered *b ½" O.D. *c ⅝" O.D. *d 0.100"th *e 34" x 60" sheet *f per 100 ft *g 5 tons & up; cold roll, anneal & pickled; 2B finish *h Incl. Federal tax *j 1100 & 3003 alloy, mill finish *k bag of 3 cu ft *l treated with air entraining agent *m 2-10M ft *n fob mill, fr allow *p 100 sq ft *r per lb. *s 30 lb bag *t 36" x 96; 10.81 lb /sh; 48" x 144", 21.7 lb /sh *u 19.31 lb /sh *v fob plant *w 48" x 144" *x 100th *y 27 gauge *aa 18M lb & up *dd add $0.75 cwt boxing *ee 4 tons & up *ff 26 ga *gg add $2 cwt boxing; $0.75 /cwt on skids *hh Theoretical wt for 48" × 96"; 60.4-lb. per sh. *ii 300-bag lots *jj 100-lb bag *mm Theoretical wt: 19.7-lb per sh. *nn 2% cash *oo skid packed *pp type 302



Clyde Hoists handle big steel for Harris Structural Steel Company, Inc.

One of the Frame-12 Clyde hoists operating on the New England Turnpike. Full air controls for ease of operation, double brake bands for extra safety are but a part of the many advantages found in these better built hoists by Clyde.

During a forty-minute interval, beginning at 4:19 A.M. on two successive Sundays, two Frame-12 Clyde Hoists, handled picks of 160 tons and 250 tons on the New England Turnpike at Stamford. That was the only interval free of traffic at the railroad terminal the turnpike crosses. Girders, up to 220 feet in length, had to be placed on schedule . . . and they were with Clydes! Clydes perform jobs impossible with ordinary hoists.

An on-the-scene engineer reported there was plenty of power for simultaneous hoisting and slewing. Clyde controls permitted smooth and accurate positioning of the girders and the performance of both hoists was outstanding.

Clyde Hoists Are Available In A Complete Range of Sizes!

Whatever your hoist requirements may be, you can capitalize on Clyde's more than a half century of hoist engineering and manufacturing experience. Clyde hoists are available in a complete range of sizes from 3,000 pounds to 80,000 pounds line pull . . . hoists that give smooth, positive control with safety and dependability.

The best names in the construction field use Clyde . . . write for your bulletins and specifications on any type of Clyde equipment.

CLYDE RIC

CLYDE IRON WORKS, Inc.

Established 1899

DULUTH 1, MINNESOTA

HOISTS · DERRICKS · WHIRLEYS · BUILDERS TOWERS · UNLOADERS · CAR PULLERS · ROLLERS

Construction Reports

Bids Asked—Low Bidders—Contracts Awarded—

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y., ELSIE EAVES, Manager
J. A. MAHONEY, M. WETZEL, M. E. SCIORRA, D. TARTAGLIA, Reports
I. H. WEBBER, M. R. ROESSLER, E. R. HUBER, Statistics.

NEW ENGLAND

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

January 6 Connecticut

STREETS AND ROADS

January 2 Massachusetts January 6 Connecticut

Massachusetts—BA 1/2—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston, dipper and hydraulic dredging of 2 basin areas in harbor, Scituate, $360,000. Plans deposit $10.

BUILDINGS—BA

Mass., Boston—BUILDING, RENOVATION—BA 1/7—Bentley School of Accounting & Finance, 921 Boylston St., completing renovation of building, $350,000. Plans deposit $100. Valz & Kimberley, Inc., 920 Fells Parkway, Melrose, archts.

†Mass., Bedford—HOUSING—BA 1/14—Contg. Officer, Air Force Cambridge Research Center, Laurence G. Hanscom Field, armed services housing, consisting 345 family housing units at Laurence G. Hanscom Field, Inv. Bids No. 19-604-58-40. $6,500,000. Plans deposit $100, refundable. Desmond & Lord, 6 Beacon St., Boston, Mass., archts. CD 12/12.

▲ Mass., Worcester—PHYSICS—BA 1/15—Worcester Polytechnic Institute, Institute Rd., Olin Hall Physics Bldg., West St. $1,500,000. Seelye, Stevenson, Value & Knecht, 101 Park Ave., New York, N. Y., structural engrs. CD 4/23.

HEAVY CONSTRUCTION—LB & CA

▲ Miami Bldg. Co., 1415 Atwood Ave., Johnston, R. I. LB $1,267,000, est. $1,500,000; Bid No. 425-526-427 and 428, R. I. Contr. Number 57-1-57-2, Terminal Bldg. at Theodore Green State Airport, HILLSGROVE, R. I. State R. I. & Prov. Plants, Div. Purchase, State House, Providence, R. I. Bids Dec. 12. CD 12/3.

CONNECTICUT—State Hy. Comm., State Office Bldg., Hartford. Bids opened 12/16.

Raymond Contr. Co. & American Constr. Co., Inc., both 100 Airport Rd., Hartford, Conn., LB $493,363, (8 bidders). Contr. 23-75 and 23-85, 4 span bridge over Farmington River and single span rolled beam bridge over Intake Canal, Road 765, Collinsville. CD 11/29.

CONNECTICUT—State Hy. Comm., State Office Bldg., Hartford.

Onofrio & Gervasini, Inc., Casson Ave., Torrington, Conn., CA $625,803, Contr. 41-114, 5 span composite girder bridge over Farmington River and b. conc. approaches, 1,200 lin. ft. reloc. Route 4, Farmington. Bids Nov. 12. Awarded Dec. 13. CD 11/15, under LB.

BUILDINGS—LB & CA

▲ Vappi & Co., Inc., 240 Sidney St., Cambridge, Mass. CA $2,309,860, est. $2,000,000. Proj. No. Mass. 13-CH-6 (D) WOMEN'S RESIDENCE HALL, Bay State Rd.-Sherborn St., BOSTON, MASS. Boston University, Bd. Trustees, c/o R. W. MacLaren, bus. mgr., 755 Commonwealth Ave., Boston, Mass. Bids Nov. 5. CD 12/6, under LB.

Kirkland Constr. Co., 140 Fifth St., Cambridge, Mass., LB $652,000, est. $600,000. SAMP-1, HOUSING for the Elderly (60 units). Manor St., BROOKLINE, MASS. Brookline Housing Auth., 226 High St., Brookline, Mass. Bids Dec. 11. CD 11/25.

Stamell Constr. Co., Inc., 33 Hurley St., Cambridge, Mass., LB $840,646, ELEMENTARY SCHOOL, Lexington St., BURLINGTON, MASS. Town, Elementary School Bldg. Comm., Burlington, Mass. Bids Dec. 9. CD 11/18.

William Bailey Co., 1 Court St., Boston, Mass., CA Approx. $600,000, Langdell HALL addn. for International Legal Studies, CAMBRIDGE, MASS. Harvard University Law School, Cambridge, Mass. Bids Nov. 26. CD 11/7.

Carmen Lorusso, 629 South St., Walpole, Mass., Separate Contracts, Approx. $600,000, RESIDENTIAL DEVELOPMENT, 37 houses, FRANKLIN, MASS. Lester N. Lechter, 739 Boylston St., Boston, Mass., archt.

J. F. Rand & Son, 67 Sudbury St., Boston, Mass., LB $610,755, ELEMENTARY SCHOOL, Green Hill, HULL, MASS. Town Elementary School Planning & Bldg. Comm., c/o Supt. Schools, 81 Central St., Hull, Mass. Bids Dec. 13. CD 12/3.

Vappi & Co., Inc., 240 Sidney St., Cambridge, Mass., CA Approx. $500,000, est. $510,000, SUPERMARKET, 942 Hyde Park Ave., HYDE PARK, MASS. First National Stores, Inc., 5 Middlesex Ave., Somerville, Mass. CD 12/11, under LB.

Carlson Constr. Corp., 555 Mt. Auburn St., Watertown, Mass., Separate Contracts, $350,000, RESIDENTIAL DEVELOPMENT, "Huckleberry Hill", Bedford Rd., LINCOLN, MASS.

DelSignore Constr. Corp., 1 Pleasant View, Worcester, Mass., LB $674,489, est. $700,000, Elementary SCHOOL, Town Park, MILFORD, MASS. Town, Elementary School Bldg. Comm., c/o Supt. Schools, High School Bldg., Milford, Mass. Bids Dec. 6. CD 11/20.

Campanelli Constr. Co., c/o Martin Cerel, owner, 18 East Central St., Natic, Mass., CA Approx. $350,000, RESIDENTIAL DEVELOPMENT, 20 houses, Rte. 27, Cochituate Center Section, WAYLAND, MASS.

▲ Louis Mitnick, Inc., 1305 Main St., Hartford, Conn., Owner Builds, $1,000,000, 100-unit HOUSING, MANCHESTER, CONN. Sanderson & Washburn, 866 Park Ave., Bloomfield, Conn., archt. and engr. CD 12/9/55.

▲ Wadhams & May Co., 15 Lewis St., Hartford, Conn., LB $1,405,806, HOSPITAL EXPANSION, 98 beds, incl. 4th floor. Proj. Conn. 49, MANCHESTER, CONN. Manchester Memorial Hospital, 71 Haynes St., Manchester, Conn. Bids Dec. 12. CD 11/20.

I. R. Stick Assocs., Inc., 611 New Park Ave., West Hartford, Conn., CA Approx. $550,000, 55 HOUSES, North of Route No. 15, MANCHESTER, CONN. Geo. Bryan, 179 Tolland Tpk., Manchester, Conn.; Elroy Weber, 57 Pearl St., Springfield, Mass., archt.; Francis P. Molloy, 10 N. Main St., West Hartford, Conn., engr. Awarded Dec. 10. CD 11/8.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

January 14, 21 Maryland

STREETS AND ROADS

January 7, 14, 21 Maryland January 7 New Jersey
January 24 Pennsylvania

N. Y., New York—PLAYGROUND—BA 1/3—Dpt. Parks, Arsenal Bldg., Central Park, 64 St. and 5 Ave., Zone 21, playground adjacent to Junior High School 141, east of Hudson Manor Terrace between W. 236 St. and W. 237 St., Bronx Boro, Contr. XG-15100-156. Plans deposit $10.

PROJECTS COVERED

By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $44,000; other public works $73,000; industrial buildings $93,000; other buildings $344,000. Also Foreign projects of $100,000 and more in size of interest to American contractors.

By Regions & Classes of Construction

(In order of Listing)

BIDS ASKED
LOW BIDDERS
CONTRACTS AWARDED

New England	Middle West
Middle Atlantic	West of Mississippi
South	Far West

PROPOSED WORK

Water Supply	Public Buildings
Sewers, Waste Disposal	Mass Housing
Bridges	Commercial Buildings
Streets & Roads	Industrial Buildings
Earthwork, Waterways	Unclassified

In These Stages

PROPOSED WORK: Before and including appointment of engineers or architects.
BIDS ASKED: BA (new announcements only). For full calendar, see also preceding issues.
SOON LETS CONTRACT: SLC
LOW BIDDERS: LB On jobs below $500,000 in value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.
CONTRACTS AWARDED: CA Except awards to low bidders previously reported in low bidder stage.
CD dates shown are of Construction Daily Issue in which last previous report was published.
OWNERS, ENGINEERS, ARCHITECTS, CONTRACTORS are invited to report their new jobs for listing in these reports when they meet or exceed the size minimums shown above. Address these news releases to J. A. Mahoney, REPORTS, ENGINEERING NEWS-RECORD, 330 W. 42 St., New York 36, N. Y.

Symbols and Abbreviations Include:

†	Federal Government
▲	Project of $1,000,000 or over.
ENR	Engineering News-Record
CD	Construction Daily

For additional reports see Construction Daily.

N. Y., New York—SUBWAY PLATFORM LIGHTING, etc.—BA 1/3—New York City Transit Auth., 370 Jay St., Brooklyn, Zone 1, furnishing, installing fluorescent lighting for station platforms, 103rd, 110th and 116th St. Stations, Broadway-7th Ave. Line, IRT Division, Manhattan Boro. Contr. E-175.

▲ New York—BA 1/9—Power Authority of State of New York, The Coliseum Tower, 10 Columbus Circle, New York, Zone 19, main power plant of Niagara Power Project in Lewiston, near Niagara Falls, Contr. N-3. Plans deposit $50. Extended date. Uhl, Hall & Rich, 230 Congress St., Boston 10, Mass., engrs. CD 11/12.

N. Y., New York—BA 1/10—Dpt. P. Wks., Municipal Bldg., Zone 7, constr. center pier fender at Third Ave. Bridge over Harlem River, between Manhattan and Bronx Boros. Plans deposit $5. CD 1/28/44.

▲ N. Y., Brooklyn—CARGO DOORS, etc.—BA 1/22—U. S. Eng., 111 E. 16 St., New York, Zone 3, replacing cargo doors, Pier Shed No. 2, Brooklyn Army Terminal. Serial No. ENG-30-075-58-88. $1,200,000.

Pa., Harrisburg—BOILER PLANT, etc.—BA 1/22—General State Auth., 18 and Herr Sts., revamping boiler plant and electrical sys. and installing new water main at Farm Show Bldgs. William K. Hood & Assocs., York, engrs. CD 1/28, under Public Bldgs.

Pa., Torrance—STEAM DISTRIBUTION SYSTEM—BA 1/22—General States Auth., 18th and Herr Sts., Harrisburg, improv. steam distr. sys. at Torrance State Hospital. $152,000. H. F. Lenz Co., Johnstown, engr. CD 10/24/56.

▲ Pa., Harrisburg—BA 1/30—Harrisburg Sewage Auth., Municipal Bldg., 423-427 Walnut St., sewage disposal plant. $8,000,000. Plans deposit each: No. 1, sewage pumping stations, force mains and collection works, $65; No. 1-A, plumbing for No. 1, $30; No. 1-B, heating for No. 1, $30; No. 1-C electrical for No. 1, $40; No. 2, constr. sewage plant and outfall sewer, $65; No. 2-A, plumbing for No. 2, $30; No. 2-B, heating for No. 2, $30, and No. 2-C, electrical for No. 2, $30. Gannett, Fleming, Cordery & Carpenter, Inc., 600 B. North Second St., engr. CD 12/13.

BUILDINGS—BA

Pa., Phila.—LIBRARY—BA 1/9—Drexel Institute of Technology, 32 and Chestnut Sts., (selected list of bidders), library, Woodland Ave. and 32 St. $500,000. George M. Ewing Co., Western Saving Fund Bldg., archt. CD 7/22.

N. Y., White Plains—DORMITORY—BA 1/10—Archdiocesan Bldg. Comm., 451 Madison Ave., New York, Zone 22, dormitory for College of Our Lady of Good Counsel. $700,000. Ferrenz & Taylor, 1451 Broadway, New York, Zone 18, archts.

Pa., Beaver Falls—APARTMENT—BA 1/14—Beaver Falls Housing Auth., P.O. Box 127, 32 suite, brick block apartment, Mount Washington. $600,000. Frank Dickerson, 1902 7th Ave., archt. CD 9/19/56.

▲ N. Y., Brooklyn—HOUSING—BA 1/21—New York City Housing Auth., 299 Broadway, New York, Zone 7, Proj. NYC-33 (city) John F. Hylan Houses, incl. 206 apartments at Moore St., Humboldt St., Siegel St. and Bushwick Ave. $2,000,000. Extended date. Keally & Patterson, 17 E. 49 St., New York, Zone 19, archts. CD 10/21.

▲ N. Y., Brooklyn—HOUSING—BA 1/21—New York City Housing Auth., 299 Broadway, New York, Zone 7, Proj. NYS-73, Bushwick Houses, incl. 1,220 apartments at Humboldt St., Monroe St. and Bushwick Ave., Flushing Ave. $12,000,000. Extended date. Keally & Patterson, 17 E. 49 St., New York, Zone 19, archts. CD 10/21.

Pa., California—SCHOOL—BA 1/23—Pa. Pub. School Bldg. Auth., 101 S. 25 St., Harrisburg, secondary school for California Community Joint School Bd. Plans deposit $50. C. C. & E. F. Compton, 414 Thompson Ave., Donora, archts. CD 3/19/54.

▲ N. Y., Far Rockaway—SCHOOL—BA 1/25—Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City, Zone 1, modernization of and new existing Far Rockaway High School, Beach 25 St. and Ocean Creek Blvd. $2,200,000. Plans deposit $25 for general constr.; $15 each for plumbing and drainage, heating and ventilating; $20 for electrical and lighting fixtures. CD 1/9.

▲ D. C., Wash.—HOUSING—BA 1/28—National Capital Housing Auth., 1724 New York Ave. N.W., 183 unit housing. Proj. DC 1-31-Sheridan Terrace, on Sheridan Rd. between Howard and Pomeroy Rds. S.E. $1,800,000. Plans deposit $50. Brown Chapman, Taher & Miller, 1000 Vermont Ave. N.W., archts. CD 3/8/56.

BUILDINGS—SLC

▲ N. Y., New York—HOSPITAL—Hospital Building Corp., 2396 Tiebout Ave., soon lets contract 6 story hospital, Pelham Parkway South and St. Paul Ave. $2,500,000. Anthony J. DePace, 151 W. 46 St., Zone 19, archt. Bids May 20, rejected. CD 5/9.

(Continued on page 64)

LIBERTY MUTUAL

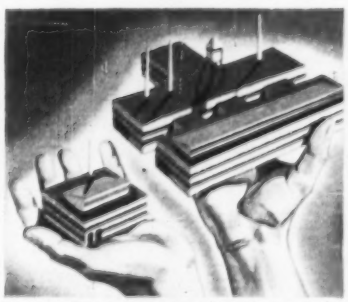
The Company that stands by you

LOST: One leg
SAVED: One man

(A LIBERTY REHABILITATION STORY)

IN ARKANSAS a one-ton boulder dropped on a worker's foot. Then followed a long, painful time of trying to save his badly crushed foot. About nine months after the accident, despite expert care, his leg had to be amputated. This was a dark moment, but the brighter part of his story began soon when he left for Liberty Mutual's Rehabilitation Center. The man from Arkansas was a good patient, eager to use his new artificial leg, eager to get the most from the Center's expert therapy. In three weeks he left the Center. Back at work, it wasn't long before he was promoted to boss on the "graveyard shift." In a night he'll now walk more than six miles on the job, up ladders, over fallen rocks and debris. He's a good example of Liberty Mutual Rehabilitation part of Liberty's Medical and Health program that helps reduce compensation insurance costs and saves good men for America.

NEW ARMS AND LEGS MADE TO ORDER. At Liberty Mutual's Rehabilitation Centers amputees are fitted with "custom-made" artificial limbs, taught to use them so as to become self-sufficient. 80% of all these patients go back to work.



ANY SIZE COMPANY CAN BENEFIT through Liberty's 4-phase medical and health program and dividend policy. In-Plant Medical Service, Industrial Hygiene, Medical Advisory Service and Rehabilitation control losses, help achieve low net cost.

LIBERTY MUTUAL INSURANCE COMPANY
LIBERTY MUTUAL FIRE INSURANCE COMPANY
Home Office: Boston

Insurance for: Workmen's Compensation, Group Accident and Health, Automobiles, Liability, Fire, Marine, Crime

(Continued from page 62)

Pa., Bryn Mawr—PARISH HOUSE, etc.—Kneedler, Merick & Zantzinger, archts., 12 S. 12 St., Phila., soon lets contract parish house and garage addn., for Church of the Redeemer, Bryn Mawr, Pa. $350,000. CD 12/12.

HEAVY CONSTRUCTION—LB & CA

John W. Rouse Constr. Corp., Gouverneur, N. Y., CA $581,581 (6 bidders) Contr. T-5, Adirondack Substation near Belfort, Lewis Co., NEW YORK, Power Auth. of State of New York, The Coliseum Tower, 10 Columbus Circle, New York 19, N. Y. Bids Dec. 3. CD 12/5, under LB.

▲ **Malan Constr. Corp.**, 2 Park Ave., New York, N. Y., CA $2,800,000, construction, elevator, heating, ventilating, air-conditioning, plumbing, electric, sewage treatment and site development work at two restaurants and two gas stations for State Thruway Auth., Berkshire Section, Rensselaer Co., NEW YORK. State Dpt. P. Wks., Gov. Alfred E. Smith State Office Bldg., Albany, N. Y. CD 11/26, under LB.

J. D. Posillico, Inc., 174 Fulton St., Farmingdale, N. Y., CA $559,947 (8 bidders) imprv. Old Court House Rd. from North Hempstead Turnpike, southerly 5,450 plus or minus ft. by constr. bit. macad. pavement concrete curbs and sidewalk storm water drainage and installing water mains incorporated Village of North Hills and vicinity Town of North Hempstead 5,450 plus or minus ft., MINEOLA, N. Y. Comr. P. Wks., Nassau Co., Old County Court House, Mineola, N. Y. Bids Oct. 23. CD 10/28, under LB.

Slattery Foundation Corp., 46-36 54th Rd., Maspeth, N. Y., CA $939,500 placement of fill for new State Hospital, Hutchinson River Parkway, Bronx Boro, NEW YORK, N. Y. State Dpt. P. Wks., Gov. Alfred E. Smith State Office Bldg., Albany, N. Y. CD 11/14, under LB.

▲ **Triton Constr. Corp.**, 66 Court St., Brooklyn 2, N. Y., CA $1,209,300, interior finish for 4 distribution bldgs., PORT NEWARK, N. J. Port of New York Auth., 111 8th Ave., New York 11, N. Y. CD 12/16, under LB.

▲ **Triton Contr. Corp.**, 66 Court St., Brooklyn 2, N. Y., LB $1,209,300 (13 bidders) constr. Pier Warehouse Bldgs. Nos. 191, 192 and 194, Tyler St., Proj. PN-420.005, PORT NEWARK, N. J. Port of New York Auth., Donald V. Lowe, chn., 111 Eighth Ave., New York 11, N. Y. Bids Dec. 10. CD 11/7.

▲ **PENNSYLVANIA**—Commonwealth of Pa., Dpt. Hys., 506 North Office Bldg., Harrisburg, Bids opened 12/13, Pa.: **George R. Frank**, 228 S. Main St., Sellersville, Pa., LB $88,073 (18 bidders) surf. existing pavt. with bit. material 22 ft. wide and variable in width 3.99 mi. T.R. 45 between Lehigh Gap and Cherryville, Lehigh Twp., Northampton Co.; LB $325,340 (13 bidders) flex. base with bit. surf. 18 ft. wide and concrete bridge 4.95 mi. L.R. 45045 between Jonas and Kresgeville Polk Twp., Monroe Co.;
Pa.—**Charles Riebe**, 133 Columbia Ave., Palmerton, Pa. LB $143,684 (16 bidders) flex. base with bit. surf. 22 ft. wide and 2 prestressed precast reinf. concrete bridge decks 0.56 mi. T.R. 100 from near Spring Creek St. Lower Macungie Twp., Lehigh Co.;
Pa.—**Indyk Bros. Constr. Co.**, 539 Vermont St., McKeesport, Pa. LB $190,574 (8 bidders) flex. base with bit. surf. 24 ft. wide 0.93 mi. L.R. 02226 in Monroeville and Trafford Boroughs, Allegheny Co.;
Pa.—**R. A. Anderson, Inc.**, R.D. 1, Gibsonia, Pa. LB $212,062 (14 bidders) flex. base with bit. surf. 22 ft. wide and 1 asph. coated metal plate pipe arch 1.55 mi. Traffic Rte. 128 in Butler Twp. between U.S. Rte. 422 and T.R. 68 Butler Twp., Butler Co.;
Pa.—**Wiegmunc Gavlik**, Box 44, Glenwillard, Pa. LB $599,746 (5 bidders) widen. existing pavt. to 22 ft. with bit. surf. constr. 1 concrete bridge exten. 2 existing concrete bridges and exten. existing concrete arch culvert 3.65 mi. T.R. 21 from near Morrisville to Beyond Love's Hill Crossroads, Franklin and Jeffers Twps., Greene Co.;
Pa.—**J. D. Eckman, Inc.**, Box 176, Atglen, Pa. LB $137,985 (7 bidders) flex. base with bit. surf. 22 ft. 18 ft. and variable in width 0.83 mi. T.R. 241 from Lebanon South, N. Cornwall Twp., Lebanon City, Lebanon Co.;
Pa.—**James T. Crissman**, Clearfield, Pa. LB $125,794 (10 bidders) flex. base with bit. surf. 18 ft. wide 1.89 mi. L.R. 33067 from near Brockway Borough NW-Snyder Twp., Jefferson Co.;
Pa.—**F. A. Canuso & Son, Inc.**, 173 W. Roosevelt Blvd., Phila., Pa. LB $1,247,597 (9 bidders) flex. base with bit. surface 50 ft. wide, exten. existing concrete arch bridge and constr. steel I-beam bridge 1.14 mi. L.R. 46 119 from Jenkintown Borough SW, Cheltenham and Abington Twps., Montgomery Co.;
Pa.—**Herbert R. Imbt, Inc.**, Box 138, State College, Pa. LB $98,020 (17 bidders) surf. existing pavt. with bit. material 22 ft. and variable in width, widen, existing pavement with flex. base to 22 ft. 3.93 mi. T.R. 45 between Beersville and Bath, Boro, East Allen and Moore Twps., Northampton Co.;
Pa.—**J. Paul Laubach**, Box 68, Bolton, Pa. LB $122,450 (5 bidders) surf. existing pavt. with bit. material 18 ft. wide and exten. existing concrete bridge, constr. flex. base and bit. surf. 18 ft. wide incl. concrete box culvert and drainage ditches 4.11 mi. T.R. 660 from intersection of U.S. Rte. 6 easterly in Richmond, Charleston and Covington Twps., Tioga Co. CD 11/19.

▲ **Ritter Bros.**, 1511 N. Cameron St., Harrisburg, Pa. LB $2,110,863, general constr. 2 levels UNDERGROUND PARKING GARAGE plus surf. parking on roof Capitol Park Extension area, HARRISBURG, PA. General State Auth., 18 and Herr Sts., Harrisburg, Pa. Bids Dec. 18. CD 11/19.

Kimbob, Inc., Box 127, Harrisburg, Pa. LB $694,905, adjoining of street constr. (Harrisburg, Pa.);
Herre Bros., 6th and Montrose Sts., Harrisburg, Pa. LB $63,650, plumbing (Harrisburg, Pa.);
Almond Elec. Co., Box 269, Middletown, Pa. LB $142,639, electrical work (Harrisburg, Pa.)

Felix Clauss & Sons, Northeast Ave. and Red Lion Rd., Phila., Pa. LB $109,350; Bid 2916, dredging in Frankford Creek, PHILA., PA. Dpt. Procurement, City Hall Annex, Phila., Pa. Bids Dec. 10. CD 12/2.

▲† **MARYLAND**—Bureau P. Rds., Dpt. Commerce, 1440 Columbia Pike, Arlington, Va.:
Wright Contg. Co., Odenton, Md., CA $1,037,235, grading, draining 3.896 mi. George Washington Memorial Parkway from Little Falls Branch to Taylor Model Basin, Proj. 100A1, Montgomery Co. Bids Dec. 10. CD 12/16, under LB.

BUILDINGS—LB & CA

E. B. Vollmar Co., Metcalfe Bldg., Auburn, N. Y., CA $901,450, general contract, Auburn Community COLLEGE, AUBURN, N. Y. Bd. Educ., Auburn, N. Y.; Beardsley & Beardsley, 64 South St., Auburn, N. Y., archts.

Philman Properties, Inc., 215 Montague St., Brooklyn 2, N. Y. Separate Contracts, $640,000. 6 story APARTMENT, 414 Elmwood Ave., BROOKLYN, N. Y. CD 7/8.

▲ **Caristo Constr. Corp.**, 26 Court St., Brooklyn 2, N. Y. CA $1,642,000, general contract PUBLIC SCHOOL 286, corner of Haring St. and Ave. "Y", BROOKLYN, N. Y. Bd. Educ., Bureau Constr., 42-15 Crescent St., Long Island City 1, N. Y. Bids Nov. 14. CD 11/18, under LB.

▲ **Southcrest Homes**, c/o Sirof, Rosenberg & Silvertsen, 207 E. 37 St., New York 16, N. Y., Owner-Builds. $3,000,000. 200 HOMES, Grand Blvd. and 14 St. west of Deer Park Ave., DEER PARK, N. Y.

▲ **5600 Realty Corp.**, 160-16 Jamaica Ave., Flushing, N. Y., Separate Contracts. $760,000, 118×320 ft. multiple DWELLING and GARAGE; $720,000, 118×320 ft. multiple DWELLINGS, 132-25 Maple Ave. east of Lawrence St., FLUSHING, N. Y. CD 5/8.

Valen Development Corp., 99-11 35 Ave., Flushing, N. Y., Separate Contracts, $400,000. 99×120 ft. multiple DWELLING and GARAGE, FLUSHING, N. Y. Martyn N. Weston, 44 Court St., Brooklyn, N. Y., archt. CD 5/8.

▲ **Frank Angelilli Constr. Co., Inc.**, 57 Clinton St., Yonkers, N. Y., CA Est. $1,000,000. Marie Regina HIGH SCHOOL, Keats Ave. and W. Hartsdale Rd., HARTSDALE, N. Y. Archdiocesan Bldg., Comn., 451 Madison Ave., New York 22, N. Y. CD 3/11.

William E. Bouley Co., Inc., 265 Genesee St., Auburn, N. Y., CA $559,573, general contract Owasco Elementary SCHOOL, OWASCO, N. Y. Bd. Educ., Auburn, N. Y. CD 8/12, under LB.

▲ **Sovereign Constr. Co.**, 1181 Broadway, New York 1, N. Y., LB $2,166,808 (6 bidders) MUNICIPAL AUDITORIUM and sports arena, Whitsboro and Oriskany Sts., UTICA, N. Y. City, City Hall, Utica, N. Y. Bids Dec. 6. CD 11/29.

▲ **James Mitchell, Inc.**, 75 Montgomery St., Jersey City, N. J. CA $2,233,000. HOSPITAL addn., BAYONNE, N. J. Bayonne Hospital, E. 30 St., Bayonne, N. J. Bids Oct. 22. CD 10/23.

▲ **Arthur Venneri**, 300 North Ave., Westfield, N. J., CA $1,294,800, general contract, 1000 student JUNIOR-SENIOR HIGH SCHOOL, Brookdale section, BLOOMFIELD, N. J., Bd. Educ., Bloomfield, N. J. CD 11/7.

Samuel S. Litman, 256 South Bernard St., Phila., Pa. Separate Contracts, $750,000, 64 unit RESIDENTIAL DEVELOPMENT, CARDIFF, N. J.

Hall Constr. Co., Point Rd., Little Silver, N. J. CA Est. $350,000 twenty-eight 2 story brick, garden type apartments as NURSES HOME, LONG BRANCH, N. J. Monmouth Memorial Hospital, 3 Ave., Long Branch, N. J. CD 5/24.

▲ **Park Ridge Heights**, c/o Rudolph L. Novak, archt., 713 Main Ave., Clifton, N. J., Owner Builds. $1,045,000, 58 HOMES, Vitmar Place off Park Ave., PARK RIDGE, N. J.

Weny Bros. & Storm, McLean Blvd., Paterson, N. J. CA Est. $800,000. 80,000 sq. ft. PLANT and OFFICE space, Harrison Ave., ROSELAND, N. J. Champlain Co., Inc., 88 Llewelyn Ave., Bloomfield, N. J. Engineers, Inc., 487 Orange St., Newark, N. J., archt.

▲ **Malan Constr. Corp. & Dean Constr. Corp.**, 2 Park Ave., New York, N. Y., CA $5,010,000, BLOWER BLDG. exten., etc., Naval Air Turbine Test Station, NBy-11554, TRENTON, N. J., P. Wks. Office, Dpt. Navy, Phila. Naval Base, Phila. Bids June 18. CD 7/8, under LB.

Westwood Park Homes, c/o Alexander Sumner Mortgage Co., Queen Anne Rd. and Cedar Lane, Teaneck, N. J., Owner Builds. $792,000, 33 HOMES, Hillcrest Ave. near Lincoln Blvd., WESTWOOD, N. J.

S. H. Evert Co., Inc., Bloomsburg, Pa., LB $596,200 (9 bidders) constr. Elementary and Secondary SCHOOL BLDG. for Halifax Area Jt. School Bd., HALIFAX TWP., PA. Pa. P. School Bldg. Auth., 101 S. 25th St., Harrisburg, Pa. Bids Dec. 11. CD 11/14.

▲ **H. B. Alexander & Son, Inc.**, 315 Vaughn St., Harrisburg, Pa., CA $1,464,797 general contract PATIENTS' BLDG. and DIETARY SERVICE UNIT, Harrisburg State Hospital, HARRISBURG, PA. General State Auth., 18 and Herr Sts., Harrisburg, Pa. Bids Nov. 20, awarded Dec. 10. CD 11/25, under LB.

▲ **United Engineers & Constructors, Inc.**, 1401 Arch St., Phila., Pa. CA Est. $10,000,000-$15,000,000 design and construct Hunlock Creek POWER PLANT addn. near NANTICOKE, PA. Luzerne County Gas & Electric Co., 247 Wyoming Ave., Kingston, Pa.

Lower Merion Builders Corp., 844 Montgomery Ave., Narberth, Pa. Separate Contracts, $350,000. RESIDENTIAL DEVELOPMENT, Stanford Dr., etc., NARBERTH, PA. Edward Geddes, 4922 City Line Ave., Phila., Pa., archt.

Architectural Steel Eng., Inc., Amber and Venango Sts., Phila., Pa. Separate Contracts. $100,000. SHOP, PHILA., PA.

Geo H. Chilli, 805 Ann St., Homestead, Pa. CA $933,950, 5 story, bsmnt., steel, brick and block HOSPITAL addn. PITTSBURGH, PA. St. Johns General Hospital, 3329 McClure Ave., Pittsburgh, Pa. Bids Sept. 17. CD 10/3, under LB.

Lindale Bldg. & Development Co., 18 S. Orange St., Media, Pa. Separate Contracts. $344,000. RESIDENTIAL DEVELOPMENT, Chestnut St., etc., UPPER DARBY, PA. T. Mangan, Fort Washington, Pa., archt.

▲ **Potteiger Co., Inc.**, West Reading, Pa. LB $1,994,338 general contract JUNIOR-SENIOR HIGH SCHOOL, WEST LAWN, PA. Wilson Joint School Auth., West Lawn, Pa. Muhlenburg Bros., Wyomissing, Pa. engrs.-archts. Bids Nov. 21.

Irwin & Leighton, Inc., 1505 Race St., Phila., Pa. CA $600,000, superstructure for two LABORATORIES, WEST PONT, PA. Merck, Sharpe & Dohme, 640 N. Broad St., Phila., Pa. Bids Nov. 27. CD 11/21.

Carozza Co., 3625 Wilkins Ave., Baltimore 29, Md. LB $874,900 (9 bidders), 2 story, brick, concrete, steel, block, asphalt tile, Edgewood Elementary SCHOOL, BALTIMORE, MD. City, Bureau Bldg. Constr., 410 Municipal Bldg., Baltimore 2, Md. Bids Dec. 11. CD 12/4.

▲ **The Terreplein, Inc.**, 2 W. University Parkway, Baltimore 18, Md., Separate Contracts. $1,518,510, 2 story, bsmnt., 18 x 24 x 32 ft., brick, block row type DWELLINGS, Loch Raven Blvd., Limit Ave., and Falkirk Rd., BALTIMORE, MD.

▲† **Gunnell Constr. Co., Inc.**, Tower Bldg., Wash., D. C. CA $1,941,500, constr. five projects, consisting NURSERY COTTAGE, Two JUNIOR UNITS, DETENTION UNIT, STAFF HOUSING and Incinerator, at Children's Center, District Training School, LAUREL, MD. D. C. Govt., Dir. Bldgs. & Grounds, 499 Pa. Ave. N.W., Wash., D. C. Bids Nov. 20. CD 11/22, under LB.

▲ **F. D. Rich Co.**, 222 Main St., Stamford, Conn., LB $4,817,000, constr. 400 unit Riverside Public HOUSING DEVELOPMENT, WILMINGTON, DEL. Wilmington Housing Auth., 1400 Todds Lane, Wilmington, Del. Bids Dec. 17. CD 11/12, under LB.

SOUTH

HEAVY CONSTRUCTION—BA

La., **Bossier City**—BA 1/7—City, City Hall, foundation for 1¼ m.g. elevated water tank. Plans deposit $20. Demopulos & Ferguson, Johnson Bldg., Shreveport, engrs.

† Va., **Oceana**—HEATING PLANT, etc.—BA 1/14—Dist. P. Wks. Office, Fifth Naval Dist., Bldg. N-26, Naval Base, Norfolk, heating plant and steam distr. repairs, Naval Air Station, NBy 15160, Spec. 15160/57. CD 9/23.

† Va., **Portsmouth**—MONORAIL SYSTEM—BA 1/14—Dist. P. Wks. Office, Fifth Naval Dist., Bldg. N-26, Naval Base, Norfolk, monorail sys. Naval Ammunition Depot, St. Juliens Creek, NBy 11048, Spec. 11048/57.

† Va., **Oceana**—RUNWAYS, etc.—BA 1/28—Dist. P. Wks. Office, Fifth Naval Dist., Bldg. N-26, Naval Base, Norfolk, repairs to runway and taxiways, Naval Air Station, NBy 11051, Spec. 11051/57.

BUILDINGS—BA

Ala., **Cullman**—HOUSING, etc.—BA 1/15—Cullman Housing Auth., Cullman, 60 low rent housing units and 1 administration-maintenance bldg. $600,000. Plans deposit $50. Northington, Smith & Kranert, 1949 Florence Blvd., Florence, archts. CD 9/12/56.

† Ala., **Huntsville**—BA On Or About 1/16—U. S. Eng., 2301 Grant St., Mobile, constr. 250,000 gal. steel elevated water tank at Redstone Arsenal, ENG-01-076-58-30.

Va., **Arlington**—BANK—BA 1/16—First National Bank of Arlington, 249 N. Glebe Rd., bank bldg., Glebe Rd. and Wilson Blvd. Walton & Assoc., 2049 N. 15 St., archts. Bids 11/21, rejected, LB $526,154. CD 11/27, under LB.

La., **New Orleans**—SCHOOL—BA 1/21—Orleans Parish School Bd., 703 Carondelet St., James Derham Junior High School. Plans deposit $100. Riccitui Assocs., 521 Royal St., archts. CD 10/31/56.

▲ Ga., **Atlanta**—COMMUNICABLE DISEASE CENTER—BA 2/18—General Services Administration, P. Bldg. Peachtree-Seventh Bldg., finance and constr. Communicable Disease Center for Public Health, Service. $11,500,000. (Lease purchase proj.) CD 11/14.

HEAVY CONSTRUCTION—LB & CA

S. C. **States Port Auth.**, 1 Vendue Range, Charleston, S. C., rejected bids Dec. 3, bulk cargo terminal and railroad trestle, CHARLESTON, S. C. LB $698,228. Will re-advertise. CD 12/6, under LB.

S. C. States Port Auth., 1 Vendue Range, Charleston, S. C., rejected bids Dec. 3, banana handling dock, CHARLESTON, S. C. LB $833,600. Will re-advertise. CD 12/6, under LB.

▲ **GEORGIA**—State Hy. Dpt., General Office No. 2, Capitol Sq., Atlanta, bids opened 12/13;

Ga.—**Wright Contg. Co.**, Drawer 1580, Columbus, Ga. LB $1,828,754, relocation Butler St. Trunk Sewer along proposed Atlanta-North-South Expressway beginning at point near intersection of Moore St. and Pratt St. and extending Northerly to point near intersection of Baker St. and Butler St., incl. connector to Hilliard St. FAP I-401-2 (9) Contract 2 and I-401-2 (1) Contract 1, Fulton Co.; LB $636,480, grading, retaining walls, 1 railroad underpass and 3 bridges 0.572 mi. on what is locally known as Atlanta North-South Expressway beginning at point near Butler and Hunter Sts. and extending NE to point near Edgewood Ave. and Fort St., incl. underpass and bridge structures at Hunter St., Decatur St. and Bell St. and at Georgia R.R., FAP-I-401-2 (9) Contract 3, Fulton Co.; LB $977,775, wid'n., reconstr., resurf.; wid'n. 1 bridge 13.163 mi. on what is locally known as Columbus Warm Springs Rd., State Rte. 85 and 85-W beginning approx. 4.2 mi. south of south city limits of Waverly Hall and extending north to point on State Rte. 85 west, approx. 0.6 mi. north of jct. of State Rte. 85 and 85 west, FAP F-074-1 (7), Harris and Talbot Counties;

Ga.—**Seaboard Constr. Co.**, Box 567, Brunswick, Ga. LB $544,382, wid'n., resurf., incl. wid'n. 1 bridge 8.435 mi. on what is locally known as Darien-Savannah Rd. State Rte. 25, U. S. Rte. 17, beginning at point approx. ¼ mi. north of north city limit of Riceboro and extending north, excepting approx. 0.8 mi. existing pavement at Midway, FAP F-009-2 (12) Liberty Co.;

Ga.—**G. L. Strickler**, Austell, Ga. LB $181,668, grading, paving 1 bridge 6.1231 mi. on what is locally known as Buckhead Eatonton Rd., FAS Rte. 926, beginning approx. 1 mi. NE of Rudden and extending north, FASP S-0926 (3), Morgan and Putnam Counties;

Ga.—**Muscogee-Moss Constr. Co.**, Box 933, Columbus, Ga. LB $182,109, wid'n., reconstr. and paving pedestrian underpass on 4 Ave. in Columbus on what is locally known as Columbus to Manchester and Hamilton Rd., State Rtes. 1 and 85, beginning at 12 St. in Columbus and extending north to 17 St., FAP U-011-1 (7) and U-004 (6), Muscogee Co.;

Ga.—**Acme Constr. Co.**, Cochran, Ga. LB $783,487, wid'n., recomstr. and resurf. 13.149 mi. on what is locally known as Louisville Augusta Rd., State Rte. 4, beginning at Point near the Jefferson Co. line and extending NE., FAP F-043-1 (13), Richmond Co.;

Ga.—**E. A. Hudson & Sons**, Bolton, Ga. LB $892,562, grading, paving 3 bridges 8.049 mi. on what is locally known as Cleveland-Blairsville Rd., State Rte. 11, beginning at intersection with State Rte. 75 in Cleveland and extending NW to Lampkin Co. line, FAP F-002-7 (3), White Co.;

Ga.—**Wainer Constr. Co., Inc.**, Box 1172, Valdosta, Ga. LB $1,419,910, grading, divided lane, paving and 3 bridges located in Richmond Co., Ga. and Aiken Co., S. C., on what is locally known as Augusta, Ga.-Aiken, S. C. Road, State Rte. 21, beginning at present bridge over the Southern R.R. in North Augusta and extending south to present contract, FAP U-UG-015-11, Richmond Co., Ga. and Aiken Co., S. C. CD 12/5.

Georgia Southern Constr. Co., Inc., P. O. Box 2008, Macon, Ga., CA $636,901, (uncompleted portion of contr.) Contr. NBy-4950, addn. to E. M. Group, U. S. Naval Air Station, NBy-16584, Glynco, BRUNSWICK, GA. Dist. P. Wks. Officer, Sixth Naval Dist., Bldg. 13, U. S. Naval Base, Charleston, S. C. CD 9/18.

▲ **G. E. Moore Co.**, Box 1069, Greenwood, S. C., LB $733,683, water and sewerage imprvs., clay pipe, MILLEDGEVILLE, GA. City, City Hall, Milledgeville, Ga. Bids Dec. 12. CD 12/6;
M. G. Aldridge Constr. Co., 1045 Patterson St., Macon, Ga., LB $692,081, water and sewerage imprvs., clay and concrete pipe, (Milledgeville, Ga.).

▲ **Intercounty Constr. Corp.**, 2100 N. Dixie Hy., Wilton Manor, Fla., LB $550,379, Proj. 5679-3, Item 1, total distribution system, NORTH MIAMI BEACH, FLA. City of North Miami Beach, City Hall, North Miami Beach, Fla. Bids Dec. 10;
Wright Constr. Co., Inc. Box 145, Hallandale, Fla., LB $744,118, Proj. 5679-3, Item 15, total Norwood Treatment Plant; LB $551,352, Item 16 Base Plant, LB $479,506, Item 23, Min. Plant, (North Miami Beach, Fla.) Bids Dec. 10. CD 11/15.

Boyce Co., 504 Pa. Ave., Clearwater, Fla., LB Contr. A, $325,699; Contr. B, $624,000; Contr. C, $609,085; Contr. D, $604,835, water pump station and force main, Phase IIB, Martin Co., ST. LUCIE RIVER, FLA. Air Products, Inc., 949 Hamilton St., Allentown, Pa. Rader-Assocs., 111 NE 2nd Ave., Miami, Fla., engrs. CD 11/14/57, under LB.

† **Monroe J. Wolfe**, 1023 Ridgewood Dr., Metairie, La., LB $48,650 (7 bidders), restoration and riprap slope pavement, consisting 1,800 cu. yd. levee restoration, 1,200 cu. yd. shell and 4,800 tons riprap, Plaquemine Parish, Inv. No. 58-112, LOUISIANA U. S. Eng., foot of Prytania St., New Orleans 9, La. Bids Dec. 11. CD 11/15.

▲ **KENTUCKY**—Commonwealth of Ky., Dpt. Hys., Frankfort,

Ky.—**Geo. M. Eady Co.**, Stanley Ave., Louisville, Ky., CA $1,631,129, b. conc. Class I surf. 0.625 mi. The Watterson Expressway in Louisville, Interchange at Taylorsville Rd., I-05-1(9) and 1(8), SP 56-898, Jefferson Co.;

Ky.—**Highland Constr. Co. Inc.**, 4416 Poplar Level Rd., Louisville, Ky., CA $876,692, grade, drain 1.893 mi. The InnerBelt Line in Louisville from north end of proposed interchange at US 60 to 441.9 ft. south US 42, I 05-1(1), SP 56-628, Jefferson Co. Bids Nov. 22. CD 12/3, under LB.;

▲ **Frank Messer & Sons, Inc.**, 4612 Paddock Rd., Cincinnati 29, O., LB $910,600 (6 bidders); administration bldg. addns., alterations at Greater Cincinnati Airport, COVINGTON, KY. Kenton County Airport Bd., Third and Court Sts., Covington, Ky. Bids Dec. 10. CD 11/14;
W. L. Harper Co., 2910 Highland, Norwood, O., LB $307,110 (5 bidders) apron overlay work (Covington, Ky.);
Eaton Asphalt Paving Co., Sterrett Ave., Covington, Ky., LB $154,515 (5 bidders) taxi widening and turnout (Covington, Ky.).

John Wile Constr. Co., 826 Humber Ave., Louisville, Ky., LB $816,600 (5 bidders) underground steam distr. sys. alterations, LEXINGTON, KY. Lexington Municipal Housing Comn., 600 Blue Grass Park Dr., Lexington, Ky. Bids Dec. 17. CD 12/3.

BUILDINGS—LB & CA

† **General Services Admin.** 18 and F Sts., N. W., Wash. D. C., received no bids Dec. 10, for financing federal OFFICE BLDG., HUNTINGTON, W. VA. $3,250,000. CD 11/14.

▲† **Robert E. Lee, Inc. & Dixie Constr. Co.**, 747 Wheaton St., Box 401, Savannah, Ga. LB $1,137,000. OFF-SITE SUPPORT UTILITIES for 1,100 unit Capehart housing, Marine Corps Aux. Air Station, NBy-15957, Spec. 15957/57, BEAUFORT, S. C. Dist. P. Wks. Office, Bldg. No. 13, U. S. Naval Base, Charleston, S. C. Bids Dec. 10. CD 11/8.

Atlantic Bldg. Corp., 1735 Pinehurst Dr., Columbia, S. C., CA $352,808, Russell HOUSE addn., University of South Carolina, COLUMBIA, S. C. University of South Carolina, Columbia, S. C. Lyles, Bissett, Carlisle & Wolff, 1321 Bull St., Columbia, S. C., archts.

▲ **Little Constr. Co.**, Box 1035, Charlotte, N. C. CA $1,994,900, HOSPITAL addn., SPARTANBURG, S. C. Spartanburg General Hospital, 855 N. Church St., Spartanburg, S. C. Bids Nov. 26, awarded Dec. 9. CD 12/5, under LB.

A. B. Newton & Co., Box 191, Vidalia, Ga., LB $362,430, low rent HOUSING, GA. 93-3A & 3B, LAWRENCEVILLE, GA. Lawrenceville Housing Auth., Lawrenceville, Ga. Laurence W. Dabney & Assocs., 3166 Maple Dr., Atlanta, Ga., archts. Bids Dec. 12.

Caldwell-Scott, 340 SE 24th St., Fort Lauderdale, Fla., LB $736,998, Proj. F-101, POLICE JAIL and COURT BLDG., FORT LAUDERDALE, FLA. City, City Hall, Fort Lauderdale, Fla. Wm. F. Bigoney, 2520 E. Las Olas Blvd., and J. M. Evans, 315 SE 9 Ave., Fort Lauderdale, Fla., archts. Geo. L. Cadenhead, 302 SE 11th Ave., mech. engr. and D. E. Britt Assocs., 309 SE 9th Ave., structural engrs., both Fort Lauderdale, Fla. Bids Dec. 11. CD 11/8.

Palm Bldg. Corp., 6701 N. E. 2 Court, Hialeah, Fla., LB $94,000, 1 story, 105 x 210 ft., concrete block, INDUSTRIAL BLDG., 1450 E. 11 Court, HIALEAH, FLA. Hunt Realty Corp., 6701 N. E. 2 Court, Hialeah, Fla. R. J. Schneider, 1431 Flamingo Way, Hialeah, Fla., archt.

▲ **Batson-Cook Co.**, Box 4963, Jacksonville, Fla., LB $1,497,000 (base bid) Northeast Florida State Mental Hospital, Baker Co., MACCLENNY, FLA. Bd. Comrs., State Institutions, 33 Adams St., Roosvelt Hotel, Jacksonville, Fla. Bids Dec. 12. CD 11/26.

Arkin Constr. Corp., 1827 Purdy Ave., Miami Beach, Fla., CA Est. $800,000 Miami Airport, MOTOR HOTEL, 2373 NW LeJeune Rd., MIAMI, FLA. Ben Gaines, c/o Mackay & Gibbs, archts., 927 Godfrey Rd., Miami, Fla. Bids Nov. 1. CD 12/5, under LB.

▲ **F. & R. Builders**, 7203 SW 40th St., Miami, Fla., Owner Builds, $2,000,000, 200 1 story, CB-S, RESIDENCES, Coral Way Village & Coral Park Estates, Dade Co., MIAMI, FLA. Coughlin & Deutch, 3030 Coral Way, Miami, Fla., archts.

L & S Enterprises, Inc., 355 Lincoln Rd., Miami Beach, Fla., contract cancelled, 150-unit MOTOR LODGE, 16500 N. W. 2 Ave., MIAMI, FLA., CA $825,000. CD 10/11, under CA.

Chester Mabry Constr. Co., 1529 Grand Central Ave., Tampa, Fla., LB $608,800, Venice JUNIOR HIGH SCHOOL, VENICE, FLA. Sarasota Co. Bd. Pub. Instruction, Supt. Office, Courthouse, 225 Palm Ave., Sarasota, Fla. Mar Hampton Stovall Prof. Bldg., Tampa, Fla., and John M. Crowell, 225 W. Palm Ave., Sarasota, Fla., archts. Bids Dec. 12. CD 11/18.

▲ **Ross E. Cox**, 4835 Adams Ave., Baton Rouge, La., CA $2,356,126, Southdown Junior-Senior HIGH SCHOOL, Lee Dr., BATON ROUGE, LA. East Baton Rouge Parish School Bd., Baton Rouge, La. Bids Dec. 12. CD 11/27.

Southern Builders Inc., Box 1815, Shreveport, La., LB $896,700 (6 bidders), JUNIOR HIGH SCHOOL, Hy. 1, Proj. No. 39, SHREVEPORT, LA. Caddo Parish School Bd., Shreveport, La. Bids Dec. 10. CD 12/4.

General Motors Corp., Argonaut Realty Corp., Argonaut Bldg., Detroit, Mich., cancelled bids to have been opened Dec. 17, PARTS WAREHOUSE and ZONE OFFICE, Indian Trail near Preston St., LOUISVILLE, KY. Will re-advertise. CD 12/10.

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HEAVY CONSTRUCTION—BA

▲ **O., Euclid**—BA 1/6—City, City Hall, 585 E. 222nd St., Cleveland, Zone 23, Constr. sewerage treatment plant addns.-sludge digestion and disposal facilities. $2,000,000. Havens & Emerson, 640 Leader Bldg., Cleveland, Zone 14, engrs. CD 11/9/56.

† **Ill., Chicago**—SENTRY BOXES—BA 1/7—U. S. Eng., 475 Merchandise Mart, Zone 54, sentry boxes and related work at special AAA sites. $200,000. CD 9/4.

▲ **O., Cleveland**—BA 1/13—Comrs. Cuyahoga Co., Court House, Zone 13, grade crossing elimination at Warrensville Center Rd. and Erie R.R. tracks and Miles Ave., Warrensville Heights. $1,405,400. Plans deposit $100. Albert S. Porter Co. Eng., Standard Bldg., Zone 13, engrs. CD 8/15.

▲ **Ind., Bloomington**—FIELDHOUSE, etc.—BA 1/30—Bd. Trustees, Indiana University, J. A. Franklin, vice pres. and treas., Bloomington, 200x400 ft steel, concrete, masonry fieldhouse, 297x334 ft. gymnasium and 600x700 ft. stadium and utilities. $13,000,000. A. M. Strauss, Strauss Bldg., Fort Wayne, Ind., archt-assocs. and Ammerman, Davis & Stout, K.P. Bldg., Indianapolis, Ind., assoc.-engrs. only on utilities and gymnasium addn. Clark & Rapuana, 145 E. 32 St., New York, N. Y., engrs., Eggers & Higgins, 100 E. 42 St., New York 17, N. Y., archts. CD 12/12.

BUILDINGS—BA

▲ **O., Cleveland**—SCHOOL—BA 1/7—Bd. Educ., 1380 E. 6th St., Zone 14, Doan Relief Elementary School, 1429 E. 91st St. $1,000,000. Arthur Baer, c/o owner, archt. CD 11/11.

▲ **Ind., Bloomington**—RARE BOOK LIBRARY—BA 1/8—Bd. Trustees, Indiana University, J. A. Franklin, vice pres. and treas., Bloomington, 3 story, bsmnt., 116x122 sq. ft. fire resistive, Lilly Rare Book Library. $1,400,000. Plans deposit $25. A. M. Strauss, Inc., 600 Strauss Bldg., Fort Wayne, Ind., archt.-engr. Eggers & Higgins, 100 E. 42 St., New York, N. Y., superv. archts. CD 5/21/56.

▲ **Ill., Chicago**—CHURCH—BA 1/14—Our Lady of Mercy Parish, 4432 N. Troy St., 1 story, brick, stone church, 4432 N. Troy St. $1,300,000. Barry & Kay, 53 W. Jackson Blvd., archts. CD 9/26.

▲ **O., East Cleveland**—GYMNASIUM—BA 1/14—Bd. Educ., 1849 Shaw Ave., gymnasium addn. at Shaw High School, $1,067,943. Plans deposit general $30; trades $25. Fulton, DelaMotte & Assocs., 6014 Euclid Aves., Cleveland, Zone 3, archts. CD 11/20.

Wis., Fox Point—SCHOOL—BA 1/14—Jt. School Dist. No. 8, 8377 N. Port Washington Rd., Milwaukee, Zone 17, Maple Dale School addn. $535,000. Plans deposit $50. Fritz von Grossmann, 5455 W. Burleigh St., Milwaukee, archt. CD 7/26.

▲ **O., Steubenville**—HOUSING—BA 1/16—Steubenville Metropolitan Housing Auth., 604 Sinclair Bank Bldg., low rent housing, Proj. OH 14-1. $1,500,000. Plans deposit $50. John J. Rietz, 210 N. 6th St., archt. CD 11/12.

▲ **Wis., Appleton**—SCHOOL—BA 1/21—Bd. Educ., 1 and 2 story, H shaped, 250x350 ft. elementary school. $1,000,000. Plans deposit $50. Extended date, George Narovec, 520 E. Wisconsin Ave., archt. CD 11/20.

▲ **O., Van Wert**—HOSPITAL—BA 1/28—Comrs. Van Wert Co. Court House, county hospital. $1,750,000. Dan Carmichael 5 E. Long St., Columbus, archt. CD 11/26/56.

BUILDINGS—SLC

Mich., Detroit—PRINTING PLANT, etc.—Slocum Publishing Co., 2666 Penobscot Bldg., soon lets contract, printing plant and office for Automotive News, East Jefferson Ave., $500,000. Harley, Ellington & Day, Inc., 157 E. Elizabeth St., archt.

HEAVY CONSTRUCTION—LB & CA

▲ **OHIO**—Dpt. Hys., Columbus, Zone 15, Bids opened 12/17,

O.—**Chapin & Chapin, Inc.**, Box 413, Norwalk, O. LB **$438,902**, est. $445,000. Contr. F-396 (2) reconstruct 2½ mi. State Route 58 from Ashland to just north of Orange Township Rd. 166, relocating the section north from Lang Creek to eliminate 4 sharp curves and 2 narrow bridges; pavement to be 24 ft. wide on 44 roadway, new full roadway-width bridges will replace the present structures over Lang Creek and Jerome Park, Ashland Co.;

O.—**Silvestri Bros.**, 713 Andrews Ave., Youngstown, O. LB **$1,629,494**, est. $2,096,643. Contr. FU-693 (2), relocate 3½ mi. route 7 from just south of Lakeville to Main St. in Conneaut to provide a modern access road to Cincinnati-Conneaut Freeway (State Route 11); relocated 7 will be 2 lanes wide on 4 lane right-of-way for 1.4 mi. will be a 4 lane divided facility, between Liberty and Main Sts. the pavement will be widened to 52 ft. from existing 26 ft.; the interchange between relocated 7 and State Route 1 will be built as part of Freeway project, which is to get under construction later. Route 7 will be carried over the north-south freeway, Ashtabula Co.;

O.—**The Horvitz Co., Inc.**, 4375 E. 146th St., Cleveland 28, O. LB **$2,949,303**, est. $3,300,000. Contr. 1-1057 (8) U-234 (2), constr. Chester-to-Superior section of Cleveland's interchanges to be built at Both Chester and Superior, the entire innerbelt will be constr. some 20 ft. below surrounding land, with all cross streets passing overhead, 6 lane expressway with opposing traffic lanes divided by 16 ft. grass median, Hy. shoulders will be paved, Cuyahoga Co.;

O.—**Visintine & Co.**, 1315 Edgeville Rd., Columbus, O. LB **$2,030,000**, est. $2,244,900. Contr. FRA-3-13.93 1-609 (8), second section, incl. partial interchanges at Broad, Town and Rich; expressway bridges over Town, Rich, Sullivant and Broad, depressing the 4 lane divided expressway under Broad, Franklin Co.;

O.—**A. J. Baltes, Inc.**, 411 Olive St., Norwalk, O. LB **$3,500,078**, est. $3,766,700. Contr. 1-1105 (23), constr. 4½ mi. Cincinnati-Conneaut Freeway from ½ mi. of State Route 76 near Wayne Co. line northeast to just north of LeRoy Rd., interchange to be constr. to carry the Freeway over Wheeling & Lake Erie (Nickel Plate) and Baltimore & Ohio Railroads and Camel Creek, and to carry Friendsville, LeRoy and Lafayette-Westfield Rds. over the Freeway, also incl. is a slight relocation of Medina Co. Rd. 46, connecting it with the Lafayette-Westfield Rd. so both may pass over the Freeway on the same bridge, Medina Co.;

O.—**O. F. Replogle Co.**, Box 308, Circleville, O. LB **$4,293,266**, est. $4,909,500. Contr. No. RIC 1-1203, constr. 4 mi. section Cincinnati-Conneaut Freeway ½ mi. south of the Mansfield-Washington Rd. northeast to 1 mi. north of Mt. Zion Rd. east of Mansfield; bridge to carry Freeway over relocated Mt. Zion Rd., Rock Fork Creek and Pennsylvania R.R., and Mansfield-Washington, and Mansfield-Lucas Roads and State Route 39 over the Freeway, Mt. Zion Rd. is to be relocated slightly to eliminate an "S" curve in the section passing under the Freeway, 4 lane divided freeway will be constr. on 300 ft. wide right-of-way and will be paved inside and outside shoulders, median width is 84 ft., Richland Co.;

O.—**P. W. Winkelman Co.**, Heffernan Bldg., 205 Harrison St., Syracuse, N. Y. LB **$2,298,752**, est. $2,733,200. Contr. No. SUM 18-14.75 10.01, constr. final section of Akron's East Expressway from just east to Market St. to beyond the south corporation limit of Tallmadge, interchange at Gilchrist Rd., bridges will be built to carry expressway over Gilchrist and the Akron, Canton & Youngstown R.R., median width varies from 4 to 20 ft., Summit Co.;

O.—**E. K. Bridge Constr. Co.**, 2416 Byrne Rd., Toledo, O. LB **$201,968**, est. $250,300. Contr. HEN 24-9.37-10.01, relocate US 24 in Napoleon extend. near Haley Ave. to just east of Hobson Rd., paving to be 4 ft. wide between Scott and Perry Sts., 48 tapering to 28 ft. between Perry and Monroe Sts. and 24 ft. wide for the remainder of relocation, existing U. S. 24 in Napoleon, Henry Co.;

O.—**Elmer Borchardt, Inc.**, Lucas St., Castalia, O. LB **$235,366**, est. $257,700. Part 1, Contr. S-1215, 2.538 mi., incl. grading, draining, paving in part with b. conc. on crushed aggreg. base and widen., resurf. with b. conc. Part 1, Sect. Ott 5-311.55, State Route 53, in Portage and Catawba Twps., S. 1215, Sect. 1, Ottawa Co., LB **$475,270**, est $517,600 for the project as a whole, Parts land 2, Ottawa Co.;

O.—**Arthur S. Langenderfer, Inc.**, 4690 W. Bancroft St., Toledo, O. LB **$233,097**, est. $259,900. Part 2, Contr. S-1215, Type T-35, 2.399 mi., incl. grading, draining, paving in part with b. conc. on crushed aggreg. base, widen., resurf. in part with b. conc. 2.399 mi., Part 2, Sect. OTT. 53-1409-1639, State Rte. 53, in Catawba Twp., S. 1215 (2), Ottawa Co. CD 12/2.

▲ **OHIO**—Dpt. Hys., Columbus, Zone 15, Bids opened 12/17,

Penker Constr. Co., 1030 Summer St., Cincinnati, O., LB **$6,983,282** (3 bidders) constr. Third Street Distribution, in Cincinnati, Hamilton Co. CD 12/6.

▲ **Acme Constr. Co.**, Box 257, Solon, O., CA **$1,617,974**, est. $1,950,000 (12 bidders) Bridge Creek Dam, incl. concrete-earthen breastworks of dam, almost 1 mi. long, 35 ft. high, 300 ft. thick at base to impounding 15 billion gals. over 1,500 acres, Geauga Co., near AKRON, O. City, City Hall, Leo Walter, Ser. Dir., Municipal Bldg., Akron, O. Wendell La Due, city water supt. CD 12/12, under LB.

L. & B. Constr. Co., 1118 Home Ave., Akron, O., LB **$77,240**, est. $85,000 stanitary sewer in Kenmore Dist. on Bigelow St., Abbey and Jason Aves., AKRON, O. City, City Hall, Leo Walter, ser. Dir., Akron, O. Bids Dec. 9.

▲ **Cunningham Bros.**, 359 E. Grand Ave., Beloit, Wis., LB **$4,968,942**, (3 bidders) Contr. No. B, Millcreek Sewerage System, CINCINNATI, O. City, City Hall, Cincinnati, O. Bids Dec. 10. CD 11/20.

Vest & Bartell, Inc., 1953 Losantville, Cincinnati, O., CA **$518,992** (3 bidders) Millcreek Channel and Sewerage System, CINCINNATI, O. City, City Hall, Cincinnati, O. Bids Dec. 10, awarded Dec. 11. CD 11/20.

▲ **Miller-Thompson Constr. Co.**, 10300 E. Jefferson St., Detroit, Mich., CA **$1,362,788** (5 bidders) constr. sewage treatment plant, SANDUSKY, O. City, City Hall, Sandusky, O., awarded 12/16. Jones, Henry & Williams, Security Bldg., Toledo, O., consult. engrs. CD 11/9/56;

Merritt-Chapman & Scott Corp., Standard Bldg., Cleveland, O., CA **$489,794** (4 bidders) outfall sewers, (Sandusky, O.);

Haddad Constr. Co., 568 Wilson Ave., Columbus, O., CA **$1,295,750** (5 bidders) East Side Interceptor Sewer, (Sandusky, O.);

Rocco Ferrara & Co. and The Boam Co., Livonia, Mich., CA **$365,516**, (8 bidders) Farwell St. and Pier Track, Interceptor (Sandusky, O.);

Kalill Co., 4161 W. 150th St., Cleveland, O., CA **$489,016**, West Side Interceptor Sewer (Sandusky, O.)

John Dehner, Inc., 1206 Clark St., Fort Wayne, Ind., CA **$48,913** (5 bidders), install 1,513 ft. 24 in. concrete water main to Farnsworth Electronics Co. plant, FORT WAYNE, IND., Bd. P. Wks., Fort Wayne, Ind. CD 2/4/49.

Traylor Bros. Constr. Co., Upper Mt. Vernon Rd., Evansville, Ind., LB **$981,830** (6 bidders), 2 lane Raymond Street bridge over White River, INDIANAPOLIS, IND. City, City Hall, Indianapolis, Ind. Bids Dec. 5. CD 11/26.

▲ **N. S. Mackie Co.**, 228 N. LaSalle St., Chicago, Ill., CA **$1,082,500**, North Shore Channel, dredging, between Foster and The Sanitary District Lock, Lincolnwood-Skokie and Wilmette Counties, CHICAGO, ILL. Metropolitan Sanitary Dist. of Greater Chicago, 100 E. Erie St., Chicago, Ill. CD 12/2.

▲ **Santucci Constr. Co.**, 5025 Church St., Skokie, Ill., CA **$1,999,190**, Upper DesPlaines Intercepting Sewer, Cont. 11-d; ext. from W. side of Mt. Prospect in Lincoln St., Central Rd., Rholing Rd., Kirchoff Rd., Blockway St. to southern limits of Palatine, CHICAGO, ILL. Metropolitan Sanitary Dist. of Greater Chicago, 100 E. Erie St., Chicago, Ill. CD 12/2.

Santucci Constr. Co., 5025 Church St., Skokie, Ill., LB **$519,245**, Hamilton Ave. aux. outlet sewers, between 104th and 105th, Beverly Calumet System, Cont. 2-c Sec. 2, CHICAGO, ILL. City, Chicago, Ill. CD 12/2.

Chism & Miller Constr. Co., Bypass 66, Springfield, Ill., CA **$828,232** (8 bidders) enlarge sanitary district disposal plant, SPRINGFIELD, ILL. City, City Hall, Springfield, Ill. CD 4/26/56.

▲ **MICHIGAN**—State Hy. Dpt., John C. Mackie, comr., Stevens T. Mason Bldg., Lansing, Bids opened 12/11.

Mich.—**L. W. Edison Co.**, 924 Floral Dr., S.E., Grand Rapids, Mich., LB **$3,048,312**, est. $2,920,000 (21 bidders) dual 24 ft. paving, 3 bridges 8.572 mi. on relocation US-16 Nash Hy. to M-66, BI 34043 C2-RN BI B2 of 34-1-6 C1-R1 BI B2 of 34-2-6 C1 RN BI B3 of 34-26 C1 RN (1 04-2-7), FAI, Ionia Co.;

Mich.—**Denton Constr. Co.**, 20415 Mack, Grosse Pointe, Mich., LB **$3,111,680**, est. $3,130,000, (19 bidders) dual 24 ft. concrete 9.003 mi. US-23 relocation from Morocco Rd. north to M-50 F 58034 C1-RN (F 58034 C2-UN (F 218 14), Monroe Co.; LB **$1,028,863**, est. $1,090,000 (21 bidders), dual 24 ft. conc. paving, 2 bridges 2.577 mi. relocation US-12 from Harris Rd., Ward Rd., IN 81041 C2-R (IN 02-5 6) IN B 6 of 81-20-13 C-RN (IN 02-5 6) I B9 of 81-2C 8 C2 RN (L 02 5 4) FAI, Washtenaw Co.;

Mich.—**Hertel-Deyo Co.**, 5205 Division St. South, Grand Rapids, Mich., LB **$2,244,998**, est. $2,420,000 (20 bidders), dual concrete pavement, 5 bridges 5.831 mi. from M-20 east of 8-Mile Rd., William & Monitor, BM 09101 C3-R BM B1 of 9-14-2 C1-R BM B3 of 9-14-12 C1-R BM Ba of 9-14-12 C2-R Bm B5 of 9-14-1 C1-R BM B6 of 9-14-12 C-R, Bay Co.;

Mich.—**Barley & Lindley Inc.**, 4000 W. Jefferson, Trenton, Mich., LB **$867,033**, est. $930,000 (22 bidders) 36 ft. concrete 2.207 mi. US-24 from US 1 to Oxford St. and bridge over Ecorse Creek north of Van Buren Rd., Dearborn, F 82052 C1-R F 82052 C2-U (F 42 6) F 82052 C8 U F 8 4 of 82-3-1 C3-R (F 42 7), Wayne Co.;

Mich.—**L. A. Davidson Co.**, 213 E. St. Joseph St., Lansing, Mich., LB **$1,856,685**, est. $2,030,000 (24 bidders) dual 24 ft. conc. paving, 4 bridges, 2.703 mi. on relocation US-16 from Portland Rd. to Grand River Bridge, Orange-Portland, BI 34044 C3 RN BI B1 of 34-11-6 C1-RN BI B2 of 34-11-6 C1-RN BI B5 of 34-14-6 C1-RN BI B6 of 34-14-6 C1-UN (1 04-2-9) FAI, Ionia Co.;

Mich.—**Carl Goodwin & Sons**, Allegan, Mich., LB **$959,859**, est. $1,040,000 (17 bidders), 24 ft. concrete paving and bridge over Pigeon River, 8.914 mi. US-31 from M 21 west to West Olive, F 70013 C1-RN F BI of 70-17-3 C2 RN (F 155 27), Ottawa Co.;

Mich.—**Hollway Constr. Co.**, Livonia, Mich., LB **$259,982**, est. $330,000 (26 bidders), grading, drainage structures, dual roads 3.103 mi. US-12 relocation from east of 40 Street easterly BI 39025 C1-RN (1 02-3 11), Kalamazoo Co.;

Mich.—**Charles J. Rogers Co. & Cooke Contg. Co.**, 1116 Penobscott Bldg., Detroit, Mich., LB **$1,325,569**, est. $1,470,000 (14 bidders), 36 ft. dual conc. paving ramps, and utilities 0.865 mi. Edsel Ford Expressway from Cadillac to Connor, Detroit BI 82025 CB-UN (1 09 1 48), FAI, Wayne Co. CD 11/29.

▲ **S. A. Healy Co. & Gararo Co., Inc.**, 40 East 7-Mile Rd., Detroit, Mich., LB **$3,627,777**, Contract P-W-2194, Section I, concrete sewers in tunnel in Livernois from Joy Rd. to Fullerton; Contract P-W-2195, Section II, concrete sewers varying in size built in tunnel in Livernois from Fullerton to Puritan, DETROIT, MICH. City, Glenn C. Richards, comr. P. Wks., City-County Bldg., Detroit, Mich. Bids Dec. 10. CD 11/12.

BUILDINGS—LB & CA

▲ **Minitz Constr. Co.**, 4048 Lee St., Cleveland, O., CA Est. **$1,500,000**, OFFICE BLDG., for International Business Machines, CINCINNATI, O. Myrvic Realty Co., c/o Herman Shapiro, archt., 4508 Greenlee St., Bernard, O. Thomas B. Purshon Eng. Co., Schmidt Bldg., Cleveland, O., engr.

William Passalaqua Bldrs., Inc., 16828 Kinsman Rd., Cleveland 20, O. Owner Builds. CA Est. **$600,000**, 4 story, brick, steel OFFICE BLDG. (to be leased to Cleveland's Child Welfare Div.), CLEVELAND, O. Eugene W. Gray, 19110 Lanbury Ave., Cleveland 22, O., archt.

▲ **Todd Tibbals**, 965 E. Broad, Columbus, O., Owner Builds, **$1,620,000**, 190 unit non-profit HOUSING, EASTGATE APARTMENTS, northeast corner Sunbury Rd., and Maryland Ave., COLUMBUS, O.

▲ **Vernon C. Neal Co.**, 587 Wedgewood Dr., Columbus, O., CA Est. **$2,992,000**, 11 brick APARTMENTS, Terrace Gardens, Alum Creek Drive, COLUMBUS, O. Zieg Realty Co., 581 E. Town St., Columbus, O.

Wood Constr. Co., Bellefontaine, O., LB **$880,700**, general contract, Children's Psychiatric HOSPITAL on Dayton State Hospital grounds, DAYTON, O. Ohio Dpt. Mental Hygiene, 220 S. Parsons Ave., Columbus, O. Bids 12/10. CD 2/28.

▲ **Knowlton Constr. Co.**, 1133 Columbus Ave., Bellefontaine, O., LB **$1,228,000**. GARFIELD HIGH SCHOOL LB **$1,256,600** TAFT HIGH SCHOOL, HAMILTON, O. Hamilton Bd. Educ., 322 Dayton Ave., Hamilton, O. Bids Dec. 12. CD 11/12.

Vaughn Building Co., 1st National Bank Bldg., Hamilton, O., LB **$636,000** (8 bidders) new bldg. at Municipal LIGHT PLANT to house a new generator and other equip., HAMILTON, O. City, City Hall, Hamilton, O. Emery, Marker & Campbell, 1408 Toledo Trust Bldg., Hamilton, O., archts.

▲ **Freeman Constr. Co.**, RD 3, Wooster, O. LB **$865,000**, general contract, 200 bed bldg. for elderly patients, HAWTHENDORN STATE HOSPITAL, near MACEDONIA, O. State Dpt. P. Wks., State Dpt. Bldgs., Columbus, O. Grand total $1,211,399. Bids Dec. 11. CD 11/18/57;

Gorman-Lavelle, 2341 E. Lavellett St., Cleveland, O. LB **$110,706**, plumbing contract, 200 bed bldg. (Macedonia, O.);

Feldman Bros., 2330 Prospect St., Cleveland, O. LB **$133,776**, heating contract, 200 bed bldg. (Macedonia, O.);

Keller Electric Co., Kent, O. LB **$101,917**, electric contract, 200 bed bldg. (Macedonia, O.)

▲ **Bank Bldg. & Equipment Co.**, 1407 Brentwood, St. Louis, Mo., CA **$1,000,000**, 2 story, attic, full bsmnt., split granite exterior, BANK BLDG., MASSILLON, O. First Savings & Loan Co., Massillon, O. Bank Bldg. & Equip. Co., 1407 Brentwood, St. Louis, Mo., archt.

▲ **Knowlton Constr. Co.**, 1133 Columbus Ave., Bellefontaine, O., CA **$1,083,500**, general contract BUSINESS ADMINISTRATION BLDG., Miami University, OXFORD, O. Ohio Dpt. P. Wks., 705 Ohio Dpts. Bldg., Columbus, O. Cellarius & Hilmerk, 613 Gas & Electric Bldg., Cincinnati, O., archts. CD 11/22, under LB.

▲ **H. F. Campbell Constr. Co.**, 9301 Michigan Ave., Detroit, Mich. CA Est. **$1,250,000**. 1 story, 25 ft. high, 225,080 sq. ft. poured concrete with black columns WAREHOUSE, Campbell St. and Junction Ave., TOLEDO, O. Edgars Warehouse, Inc., 1924 W. Lafayette, Detroit, Mich. Campbell Eng. Co., 9320 Michigan Ave., Detroit, Mich., designed project.

W. E. Smith & Sons, 60 N. Westwood, Toledo, O., CA **$100,000**, WAREHOUSE AND BULK PLANT, 1 story 2000 headquarters of 1,300 sq. ft., 1,400 sq. ft. metal warehouse, (bulk plant to have initial capacity of 75,000 gal.), Hill Ave. between Byrne Rd. and Westwood Ave., TOLEDO, O. Ohio Oil Co., Findlay, O.

▲ **George P. MacDougal**, 505 W. 49 St., Indianapolis, Ind., CA **$1,085,838**, JUVENILE CENTER and COURT, 2401 N. Keystone St., INDIANAPOLIS, IND. Comrs. Marion Co., Court House, Indianapolis, Ind. Bids Dec. 5, awarded Dec. 11. CD 7/27/56.

Edwin E. Hartrich & Son, 141 W. Jackson Blvd., Chicago, Ill., CA **$750,000**, 1 story, 80,000 sq. ft. brick, OFFICE AND PRINTING PLANT SE cor. Maywood Dr. and 25th, BELLWOOD, ILL. Sleepeck Hellman Printing Co., 1301 W. Blackhawk St., Chicago, Ill. CD 11/11.

Mercury Bldrs., Inc., 761 S. Harlem Ave., Forest Park, Ill., CA **$946,605**, 1 and part 2 story HIGH SCHOOL & GYMNASIUM Unit 4, Ridgeland and 115th Sts., BLUE ISLAND, ILL. School Dist. 218, 127th and Sacramento Sts., Blue Island, Ill. CD 12/5, under LB.

▲ **Henry Bros. Co.**, 9112 S. Ashland Ave., Chicago, Ill., LB **$1,400,000**, ADMINISTRATION BLDG., KITCHEN and DINING HALL, DORMITORY BLDG., GYM., GARAGE and FACULTY BLDG., 203 St. and Government Hy. (series of separate but connected bldgs.) OLYMPIA FIELDS, ILL. Augustinian Fathers, 250 E. 111th St., Chicago, Ill. Fox & Fox, 30 N. La Salle St., Chicago, Ill., archts.

▲ **Darin & Armstrong**, 2041 Fenkell, Detroit, Mich., CA Est. **$1,000,000** WAREHOUSE and OFFICE, East 1-Mile Road, CENTER LINE, MICH. Chrysler Corp., 341 Mass. St., Detroit, Mich. Albert Kahn, Associated Architects & Engineers, Inc., 345 New Center Bldg., Detroit, Mich., archt. and engr.

WEST OF MISSISSIPPI

HEAVY CONSTRUCTION—BA

† **Colorado**—BA 1/7—Bureau Reclamation, Dpt. Interior, Grand Junction, Grand Valley Project, channel erosion control for Little Salt wash above Highline canal, Grand Junction, Mesa Co., Spec. 400C-104. L. N. McClellan, Bldg. 1A, Denver Federal Center, Denver, ch. engr.-archt. CD 9/17.

Colo., Arvada—SWIMMING POOL—BA 1/8—North Jefferson County Metropolitan Recreation Dist., 7780 Grant Place, constr. of L-shaped swimming pool; 42 x 150 ft. swimming area, 33 x 45 ft. diving area; 20 x 40 ft. wading pool, $250,000. Larkin & Assocs., 19 E. Gregory Blvd., Kansas City, Mo., archts.-engrs. CD 10/7.

† **South Dakota**—TRANSFORMER—BA 1/9—Bureau Reclamation, Denver Federal Center, Denver, Colo., one 8,000-kva power transformer for Summit Substation, Spec. DS-4991, Missouri River Basin Proj. Extended date. CD 10/25.

† **WYOMING AND MONTANA**—BA 1/14—Bureau P. Rds., Bldg. 40, Denver Fed. Center, Denver, Colo., Proj. 2, constr. 0.329 mi. bridges, North Entrance Yellowstone National Park. Over $75,000.

Wyo., Worland—BA 1/14—City, City Hall, sewage lagoon. $142,896. Harold Hoskins & Assocs., 725 9 St., Greeley, Colo., engrs.-archts. CD 4/10.

† **N. M., Albuquerque**—SUB-STATION, etc.—BA 1/16—U. S. Eng., P. O. Box 1538, sub-station, aerial and underground electrical lines, relocation of existing sub-station, Sandia Base, Inv. No. ENG-29 005-58-39. $100,000-$250,000. CD 12/10.

† **Oklahoma**—BA 1/21—Bureau Reclamation, Dpt. Interior, Bldg. 1A, Denver Federal Center, Denver, Colo., Washita Basin Proj., four 5 ft. high pressure gate valves for outlet works at Fort Cobb Dam, Fort Cobb, Okla., Spec. 4998. Extended date. L. N. McClellan, Bldg. 1A, Denver Federal Center, Denver, Colo., ch. engr.-archt. CD 12/2/57.

BUILDINGS—BA

Mo., Sedalia—HOSPITAL—BA 1/9—Bothwell Memorial Hospital, Bd. Trustees, 643 E. 15th St., 3 story, bsmnt., 88 x 141 ft. hospital addn. incl., lockers, offices, lounges, laboratory, surgery, emergency, x-ray, nursery, etc. $600,000. Plans deposit $50. Hewitt & Royer, 707 Westport Rd., Kansas City, Mo., archts. CD 9/26.

▲ **N. M., Albuquerque**—FEDERAL OFFICE—BA 1/22—General Services Admin., Denver Federal Center, Denver, Colo., constr. and finance federal office bldg. $5,800,000.

† **N. M., Los Alamos**—ENGINEERING AND LABORATORY—BA 1/22—U. S. Atomic Energy Comn., c/o Contracts Section, Los Alamos, 2 story, partial bsmnt. 22,000 sq. ft., engineering and laboratory, TA-41, Inv. 291-58-4. $500,000-$600,000.

▲ **Iowa, Council Bluffs**—POST OFFICE AND COURT HOUSE—BA 1/28—General Services Admin., 2306 E. Bannister Rd., Kansas City, Mo., Wash. D. C., construct and finance post office and courthouse, $1,690,000. CD 11/14.

▲ **Kan., Kansas City**—POST OFFICE, etc.—BA 1/31—General Services Admin., 2306 E. Bannister Rd., constr. and finance post office and court house. $2,100-000. Lease-Purchase project. CD 11/14.

▲ **Iowa, Burlington**—POST OFFICE—BA 2/14—General Services Admin., 2306 E. Bannister Rd., Kansas City, Mo., post office. $1,180,000. CD 11/14.

Tex., San Antonio—WAREHOUSE—Bids Asked—J. M. Cavender, Jr., 801 Broadway, warehouse. $100,000.

BUILDINGS—SLC

▲ **Minn., St. Paul**—APARTMENTS—National Redevelopment Corp., 1207 N.B.C. Bldg., Cleveland, O., soon lets contract fourteen 2 story apartments in area bounded by Rondo Ave., Fuller Ave., Farrington and Marion Sts. $1,000,000. R. A. Keller, 12429 Cedar Rd., Cleveland, O. CD 11/27.

HEAVY CONSTRUCTION—LB & CA

▲ **IOWA**—State Hy. Comn., Ames, Bids opened 12/10,

Iowa—**Booth & Olson, Inc.**, 529 Ins. Exch. Bldg., Sioux City, Iowa, LB **$3,192,219**, c. conc. 14.019 mi. Interstate Route 3 from near S.W. corner Sec. 27-76-44 northerly to U. S. 30 near N.W. corner Sec. 21-78-44, I-920(6), Harrison and Pottawattamie Counties, LB **$225,017**, c. conc. 1.75 mi. various locations on U. S. 218 north of Mount Pleasant, F-56(8), Henry Co., LB **$971,841**, c. conc. 4.466 mi. Interstate Route 3 from north corporation line of Council Bluffs northerly to N.W. corner Sec. 34-36-44, I-920(5), Pottawattamie Co.;

Iowa—**Cameron, Joyce & Co.**, 19 South 7 St., Keokuk, Iowa, LB **$2,661,397**, c. conc. 8.381 mi. Interstate Route 2 from point near center Sec. 31-78-25 northerly to point near N¼ corner NE¼ NE¼ Sec. 20-79-25, I-IG-853(11), Polk Co., LB **$85,106**, rolled stone base and bit. surf. treatment 3.862 mi. Farm to Market Road from S.W. corner Sec. 34-87-16 north to Iowa 58, S-381(5), LB **$109,096**, rolled stone base and bit. surf. or crushed stone base and bit. surf. or crushed and rolled stone base and bit. surf. 4.923 mi Farm to Market Road from N.W. corner Sec. 3-89-18 south 3 mi. thence east to S.E. corner Sec. 14-89-18, S-1871(3), Grundy Co.;

Iowa—**W. Hodgman & Sons**, Fairmont, Minn., LB **$77,248**, b. conc. 2.823 mi. Farm to Market Road from west corporation line of Pella southwesterly to Wabash Railroad in Sec. 20-76-18, S-179(6), LB **$157,723**, b. conc. 5.09 mi. Farm to Market Road from Pleasantville east and northerly to point in SW¼ Sec. 9-76-20, S-921(4), LB **$180,562**, b. conc. 6.166 mi. Farm to Market Road from north corporation line of Pella northerly to Skunk River bridge in SW¼ Sec. 3-77-18, S-922(2), Marion Co.;

Iowa—**Morgan Constr. Co.**, Fort Dodge, Iowa, LB **$75,786**, b. conc. 4 mi. Farm to Market Road from S.W. corner Sec. 24-90-30 north to N.W. corner Sec. 1-90-30, Proj. 58-FM-2, LB **$75,819**, b. conc. 3.562 mi. Farm to Market Road from S.W. corner Sec. 5-87-28 north to W¼ corner Sec. 20-88-28, Proj. 58-FM-3, LB **$297,584**, b. conc. 13.506 mi. Farm to Market Road from S.W. corner Sec. 32-86-30 north to U.S. 20, S-1269(4), Webster Co.;

Iowa—**Hallett Constr. Co.**, Crosby, Minn., LB **$3,182,485**, c. conc. 13.571 mi. Interstate Route 2 from point approximately 0.10 mi. north of Clarke County line northerly to Iowa 92 east of Bevington, IN-I-IG-353 (9), Warren Co., LB **$1,305,886**, b. conc. 7.023 mi. Interstate Route 2 from near center Sec. 6-72-25 northerly to point approx. 0.10 mi. north of Warren County line, I-853(8), Clarke and Warren Counties;

Iowa—**Norris Constr. Co.**, 311 S. Wapello St., Ottumwa, Iowa, LB **$100,196**, b. conc. 3.987 mi. Farm to Market Road from Iowa 2 near center Sec. 19-68-9,

south and east into Mount Sterling, S-933(2), LB $155,025, b. conc. 6.543 mi. Farm to Market Road from Iowa 1 in Birmingham southeasterly to Iowa 269 in Stockport, S-2315(2), Van Buren Co.;

Iowa—**John P. Abramson Constr. Co.**, 9101 Hickman Rd., Des Moines, Iowa, LB **$324,237**, grading 2.279 mi. relocation of U. S. 67 from point in SW¼ Sec. 8-78-5E northeasterly to near S. E. corner Sec. 4-78-5E, FN-55, LB **$183,703**, grading 2.432 mi. relocation of U. S. 67 from near center NW¼ Sec. 24-78-4E northeasterly 16 to point in SW¼ Sec. 8-78-4E, FN-114, Scott Co.;

Iowa—**Fred Carlson Co.**, Decorah, Iowa, LB **$83,846**, c. conc. 0.311 mi. U. S. 18 and 52 in Postville from Lawler Street southeasterly to south corporation line, FN-166, Allamakee Co.;

Iowa—**Western Contr. Corp.**, 400 Benson Bldg., Sioux City, Iowa, LB **$2,582,710**, c. conc. 10.761 mi. Interstate Route 2 from Iowa 92 near E¼ corner NW¼ Sec. 30-76-25, northerly to point near center Sec. 31-78-25, I-853(10), Polk and Warren Counties;

Iowa—**Greene Limestone Co.**, Greene, Iowa, LB **$278,524**, b. conc. 10.114 mi. Farm to Market Road out of Steamboat Rock northerly to N.W. corner Sec. 12-89-19, S-833(3), Hardin Co. CD 11/27.

▲ **Whittle Contg. Co.**, P.O. Box 2116, National Station, Springfield, Mo., CA **$1,038,623** (combined bid on Div. G & H) Div. G, Phelps Grove Trunk Sewer; Div. H, Jordan Creek Trunk Sewer, SPRINGFIELD, MO. City, c/o W. B. Avery, city mgr., Springfield, Mo. Bids Nov. 21. CD 12/2, under LB.

† **Hallett Constr. Co.**, Crosby, Minn. LB **$754,780** (9 bidders) stringing conductors and overhead ground wires, Utica Junction Sioux Falls 230-Kilovolt transmission line and install 230 kilovolt air brake switches, Utica Jct. Tap switching station in Yankton, Turner, Lincoln and Minnehaha Counties, Missouri River Basin Proj. Transmission Div. Spec. DC 4993, SOUTH DAKOTA. Bureau Reclamation, Dpt. Interior, Huron, S. D. Bids Dec. 10. CD 11/11.

▲† **U. S. Eng.**, Federal Office Bldg., Kansas City, Zone 6, Mo., cancelled bids to have been opened Dec. 17, spillway at Turtle Creek Dam and Reservoir on Big Blue River near Manhattan, CIVENG-23-028-58-25, KANSAS. **$7,000,000.** Will re-advertise. CD 11/19.

Dell Constr. Co., Pittsburg, Kan., CA **$348,800**, general contract 3 CHILDRENS COTTAGES at Parsons State Hospital and Training Center, PARSONS, KAN. State, Dpt. Admin., Topeka, Kan. John Brink, Topeka, Kan., state archt. Bids Nov. 19.

▲ **TEXAS**—State Hy. Comn., Austin,

Tex.—**Lange & Lowan Constr. Co.**, P. O. Box 506, Brenham, Tex., CA **$137,947**, grading, structures base, surf. 4.965 mi. Hy. FM 1090 and FM 2433, Proj. S-352 (2) and Proj. S-2185 (1), Calhoun Co.;

Tex.—**Austin Bridge Co. & Austin Constr. Co.**, P. O. Box 1590, Dallas, Tex., CA **$3,600,827**, grading, structures, storm sewers and c. conc. 2.01 mi. Hy. US 77, Proj. I 22, Dallas Co. CD 11/15.

▲ **TEXAS**—State Hy. Comn., Austin,

Tex.—**Gulf Bitulithic Co. & Williamson Bros. Constr. Co.**, P.O. Box 2527, Houston, Tex. CA **$1,767,396**, grading, structures, shell concrete base and A.C.P. 3.62 mi. Hy. SH 73, Proj. F 1052 (41), Jefferson Co.;

Tex.—**Gulf Bitulithic Co., F. M. Reeves & Sons, Schwope Eng. Constr. Co.**, P.O. Box 2572, Houston, Tex., CA **$2,224,329**, flex. base, c. conc. and c. conc. 2.725 mi. Hy. US 59, Proj. U 514 (21) and F 514 (22), Harris Co. Bids Dec. 11. CD 11/15.

▲ **TEXAS**—State Hy. Comn., Austin,

W. R. Aldrich & Co., P.O. Box 1751, Baton Rouge, La. CA **$2,543,672**, shell concrete base and c. conc. 3.581 mi. Hy. US 90, Proj. I 1091, Orange Co. Bids Dec. 10. CD 11/15.

▲ **TEXAS**—State Hy. Comn., Austin,

Harry Campbell, Rte. 5, Box 68-A, Abilene, Tex. CA **$1,447,746**, grading, structures 7.549 mi. Hy. US 62 and 180, Proj. S 149 (11), Culberson Co. Bids Dec. 11. CD 11/26.

J. E. Margon, 215 N. Willow St., El Paso, Tex., CA **$122,000**. cattle barn, exhibit and storage bldgs., EL PASO, TEX. El Paso Co., Court House, El Paso, Tex. CD 12/20.

† **Gate City Steel, Inc.**, 4000 Warm Springs Ave., Boise, Idaho, LB **$55,575** (11 bidders), one 14 ft. x 18 ft. fixed wheel gate for inlet gate structure of Fremont Canyon power conduit, Glendo unit, Missouri River Basin Proj., DS-4994, WYOMING. Bureau Reclamation, Dpt. Interior, Denver Federal Center, Denver, Colo. Bids Dec. 12. CD 11/14.

▲† **Long Constr. Co.**, 1165 S. Pennsylvania Ave., Denver, Colo., CA **$1,086,534**, Contr. IFB 05-613-58-11, staff club, incl. approx. 31,545 sq. ft. at Air Force Academy, COLORADO SPRINGS, COLO. Dpt. Air Force, Box 1670, Colorado Springs, Colo. Bids Nov. 26, awarded Dec. 5. CD 12/4/57, under LB.

BUILDINGS—LB & CA

▲ **Northern States Power Co.**, A. S. King, pres., 15 South Fifth St., Minneapolis, Minn., Owner Builds, **$25,000,000**, 150,000 kw unit addn. to owner's Black Dog GENERATING PLANT on Minnesota River, south of Twin Cities, MINNEAPOLIS, MINN. Pioneer Service & Engineering Co., 231 South LaSalle St., Chicago, Ill., engr. Work under way. CD 9/4.

▲ **Fischer & Fritchel Contg. Co. and Design & Constr. Inc.**, both of 8703 St. Charles Rd., St. Louis, Zone 14, Mo. (jointly) CA **$3,569,100**, 350 unit HOUSING PROJECT, JEFFERSON BARRACKS (St. Louis 23, P. O.), MO. St. Louis County Housing Auth., Robert J. Tracy, exec. dir., 1306 Civic Center Dr., Lemay 23, Mo. Bids Dec. 12. CD 12/16, under LB.

Charcoal, Inc., c/o Eugene Lewis, 2276 N. Holcombe St., Houston, Tex. Owner Builds. **$150,000.** charcoal production PLANT expansion between COLLEGE STATION-NAVASOTA, TEX. CD 12/19.

▲ **Inge & Hayman, Inc.**, 2115 Butler St., Dallas, Tex. CA **$2,750,000** general contract HOSPITAL UNIT, DALLAS, TEX. Baylor University Hospital, 5300 Gaston St., Dallas, Tex. CD 3/5.

Coastal Bend Constr. Co., Box 4285, Corpus Christi, Tex. LB **$514,279**, 48 unit PUBLIC HOUSING, KINGSVILLE, TEX. Kingsville Housing Auth., Kingsville, Tex. Bids Dec. 5. CD 11/12

▲ **J. F. Pritchard & Co.**, 4625 Roanoke Parkway, Kansas City, Mo., CA **$3,400,000** expansion of existing REFINERY to add a catalytic reformer, alkylation unit and related facilities, MOUNT PLEASANT, TEX. American Petroleum Co. of Texas (subsidiary of American Petrofina, Inc.) c/o Mercantile Securities Bldg., Dallas, Tex. Bids Nov. 1. CD 8/13.

▲ **J. W. Cooper Constr. Co.**, P.O. Box 3947, Odessa, Tex. LB **$1,455,832.** Permani HIGH SCHOOL, ODESSA, TEX. Odessa Ind. School Dist., Odessa, Tex. Bids Dec. 12. CD 11/26.

Judson H Phelps, Rte 2, Box 133, San Antonio 12, Tex., CA **$373,500**, SHOP UNITS 1, 2, 3 and 3-A, off Broadway, SAN ANTONIO, TEX. Gillespie Motor Co., c/o Ellis F. Albaugh & Assocs., archts., 3700 San Pedro Ave., San Antonio, Tex. CD 10/24.

G. W. Mitchell, Box 8308, Laurel Heights, San Antonio, Tex. LB **$725,536**, est. $500,000 HEADQUARTERS BLDG. for 700 employees, WAREHOUSING and SHOPS, SAN ANTONIO, TEX. State Hy. Dpt., Austin, Tex. and 2300 Roosevelt Ave., San Antonio, Tex. Bids Dec. 5. CD 11/15.

▲ **Post Office Dpt.**, 12th and Pennsylvania Aves. N.W., Wash., D. C., rejected bids Nov. 8, construct and finance POST OFFICE, DENVER, COLO. LB **$8,600,000.** Will re-advertise. CD 11/18, under LB.

FAR WEST

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

STREETS AND ROADS

January 3 Arizona **January 15, 16 California**

Calif., Los Angeles—BA 1/3—Los Angeles County Flood Control Dist., 2250 Alcazar St., Los Angeles, pipe and wire revetment flood control channel imprv. and steel girder railroad bridge at Browns Creek, $150,000. Plans deposit $3.64. CD 2/12.

† **Ariz., Fort Huachuca**—HANGAR, etc.—BA 1/7—U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif., hangar, motor park and utilities, Serial No. ENG-04-353-58-18, $850,000. CD 8/30/56, under Public Buildings.

† **Nev., Hawthorne**—RAILROAD REHABILITATION—BA 1/8—Dist. P. Wks. Office, Twelfth Naval Dist., San Bruno, Calif., railroad rehabilitation, Increments 4 and 5 Naval Ammunition Depot, NBy 14182, Spec. 14182/57.

Calif., Atwater—BA 1/23 (tentative)—City, City Clerk, City Hall, sewage disposal plant, $495,000. Homer W. Jorgensen, 1320 La Loma Ave., Modesto, engr. CD 10/10.

BUILDINGS—BA

▲ **Calif., Los Angeles**—JUNIOR HIGH SCHOOL—BA 1/8—Los Angeles Bd. Educ., 1425 S. San Pedro St., frame, stucco Parkman Junior High School, Canoga Park. $2,400,000. A. C. Zimmerman, 2439 Hyperion Ave., archts. CD 12/5.

▲ **Calif., Palo Alto**—MEDICAL CENTER—BA 1/23—Stanford University, Bd. Trustees Leland Stanford Junior University, Encina Hall, Palo Alto, 200,000 sq. ft. Stanford Medical Center, center bldg., Edwards Bldg., Clinic Bldg. $6,000,000. Plans deposit $50. Edward D. Stone, 635 Bryant St., Palo Alto, archts. Hall, Pregnoff & Matheu, 251 Kearny St., San Francisco, engrs.

▲ **Calif., Long Beach**—PUBLIC SAFETY—BA 1/29—City Council, City Hall, 7 story public safety bldg. $3,500,000. Francis J. Heusel & Killingsworth, Brady & Smith, 730 E. 3 St., Long Beach, archts. CD 8/1.

▲ **Calif., San Diego**—COURT HOUSE—BA 2/4—San Diego Co., 1600 Pacific Hy., San Diego, county court house, 3 story courts, area 8 story jail, 7 story office area, $10,731,000. CD 4/14/55.

HEAVY CONSTRUCTION—LB & CA

IDAHO—State Hy. Dpt., Boise,

Mountain State Constr. Co., Municipal Airport, Pocatello, Idaho, LB **$136,808**, regrade roadway on 0.428 mi., reconstr. roadmix bit. surf. 4.147 mi. N.S. 30 N. and crushed gravel in stockpile, Bannock Co.

IDAHO—State Hy. Dpt., Boise,

Earl T. McNutt Co., Eugene, Ore., CA **$630,972**, constr. roadway, drainage structures and bit. surf. 4.438 mi. N.S. 30, Gooding Co.

† **Plant-Dartnell**, 3338 La Mesa Rd., Salt Lake City, Utah, LB **$65,172**, earthwork and structures, Provo River Channel, Spec. 400C-102, UTAH. Bureau Reclamation, Dpt. Interior, Spanish Fork, Utah. Bids Dec. 5. CD 11/21.

N. S. Shumway, Contractor, 1702 West Fillmore St., Phoenix, Ariz. LB **$347,750**, est. $385,000. first phase of sewage imprv. program sewage treatment plant and outfall line, WINSLOW, ARIZ. City, City Hall, Winslow, Ariz. Headman, Ferguson & Carrollo, 3308 N. 3 St., Phoenix, Ariz., engrs.

Cherf Bros., Inc. and Sandkay Contractors, (jointly) Ephrata, Wash., CA **$350,000**, grading, drainage, installation of buttresses and riprap for 1.5 mi. change on owner's main line between Prosser and Gibbon, about 30 mi. west of Pasco, WASHINGTON, Northern Pacific R. R. Co., H. R. Peterson, ch. engr. 176 E. 5 St., St. Paul Minn.

▲ **WASHINGTON**—State Hy. Comn., Olympia, Bids opened 12/17,

Scarsella Brothers, 2207 South 146 St., Seattle, Wash. LB **$1,046,735**, grading 3.359 mi. Primary State Hy. No. 1, Pierce Co. CD 12/3.

▲ **W & S Constr.**, P. O. Box 826, Fair Oaks, Calif., CA **$1,371,575** renovation Russian River Aqueduct No. 1, Coyote Dam Proj. (install pipe line and appurtenances). Sonoma Co., CALIFORNIA. Sonoma County Flood Control & Water Conservation Dist. c/o Bd. Supervs., Courthouse, Santa Rosa, Calif. CD 5/18/55.

CALIFORNIA—State Div. Hys., 1120 N St., Sacramento, Calif.,

A. Teichert & Son, Inc., 1931 Stockton Blvd., Sacramento, Calif., CA **$693,442**, grading, paving 5.1 mi. and constr. bridge and 2 culverts to wid'n. existing U.S. 50 to 4-lanes between Richards Ave. and Charter Way in and near Stockton San Joaquin Co. Bids Dec. 4, awarded Dec. 13. CD 12/10, under LB.

Vernon Paving Co., 3200 E. Vernon Ave., Los Angeles, Calif., CA **$79,430.** imprv. portions of Charleville Blvd. and Gregory Way, BEVERLY HILLS, CALIF. City Council, City Hall, Beverly Hills, Calif. Bids Dec. 4, awarded Dec. 10.

† **R. E. Hazard Constr. Co.**, P.O. Box 3217, Hillcrest Sta., San Diego, Calif., LB **$78,984** (4 bidders) repairing and resurf. roads, Spec. 14881, CAMP PENDLETON, CALIF. Eleventh Naval Dist., 1220 Pacific Hy., San Diego, Calif. Bids Dec. 10. CD 11/29, under Public Buildings.

Bob Bosmyak, 3014 Worthen Ave., Los Angeles, Calif., LB **$183,775** (6 bidders) sewers in 122 St. 4.174 mi. C.I. 1886, Athens, LOS ANGELES, CALIF. Bd. Supervs., Los Angeles Co. Hall of Records, Los Angeles, Calif. Bids Dec. 6. CD 11/18.

▲ **Charles L. Burch & Sons**, 2419 North Chicago Ave., El Monte, Calif. LB **$1,019,558**, est. $5,000,000 (11 bidders) Proj. No. 6 East Compton Creek No. 2 Storm Drain Unit 3, LOS ANGELES, CALIF. Los Angeles Co. Flood Control Dist., 2250 Alcazar St., Los Angeles, Calif. Bids Nov. 1 cancelled, new bids Dec. 13. CD 10/7.

Colich Constr. Co., 8320 Isis Ave., Los Angeles, Calif., CA **$96,701** (6 bidders) Davidson City Trunk Sewer, Sections S-2 and 3, North Long Beach, LOS ANGELES, CALIF. Los Angeles Co. Sanitation Dist. No. 8, 2020 Beverly Blvd., Los Angeles, Calif. Bids Dec. 11, awarded Dec. 11.

Colich Constr. Co., 8320 Isis Ave., Los Angeles, Calif., CA **$292,603** (14 bidders) Rosamond Outfall Trunk Sewer, Section No. 1, Lancaster, LOS ANGELES, CALIF. Los Angeles County Sanitation Dist. No. 14, 2020 Beverly Blvd., Los Angeles, Calif. Bids Dec. 9, awarded Dec. 10. CD 11/20.

Los Angeles Co. Flood Control Dist., 2250 Alcazar St., Los Angeles, Calif., cancelled bids to have opened Nov. 15, Storm Drain Bond Issue No. 43 Bundy Dr. and Bowling Green Way Storm Drain, LOS ANGELES, CALIF. **$914,300.** Will re-advertise. CD 10/28.

▲ **Ukropina-Polich-Kral**, 201 E. Las Tunas Dr., San Gabriel, Calif., CA **$5,270,647** constr. 12 mi. pipe line second San Diego Aqueduct near Temecula Riverside Co., LOS ANGELES, CALIF. Metropolitan Water Dist., 306 W. 3 St., Los Angeles, Calif. Bids Dec. 4. CD 12/10, under LB.

Webb & White, 512 S. San Vicente Blvd., Los Angeles, Calif., LB **$878,427** (21 bidders) effluent discharge facilities 3½ mi., 66 in. rein.-con. pipe, Compton Creek, LOS ANGELES, CALIF. Sanitation Dist. No. 1, 2020 Beverly Blvd., Los Angeles, Calif. Bids Dec. 10. John A. Carollo, 3308 N. 3 St., Phoenix, Ariz., engr. CD 11/27.

Montgomery Ross Fisher, 10835 Santa Monica Blvd., West Los Angeles, Calif. LB **$932,360** (12 bidders) Big Canyon Reservoir and water mains, 600 acre ft. NEWPORT BEACH, CALIF. City Council, City Hall, Newport Beach, Calif. Bids Dec. 9. Bids Oct. 4 rejected. CD 6/12.

Municipal Water Dist., 703 Main St., Ramona, Calif. rejected bids Nov. 8, Unit G, 1 m.g. steel reservoir RAMONA, CALIF. LB **$83,030.** CD 11/20, under LB.

BUILDINGS—LB & CA

▲† **Page City Constructors**, Bakersfield, Calif., CA **$3,157,581** two hundred 3 bedroom RESIDENCES for Page Arix. Colorado River Storage Proj., Middle River Division, Spec. DC 4989, ARIZONA. Bureau Reclamation, Dpt. Interior, Kanab, Utah. Bids Nov. 7, awarded Dec. 10. CD 11/11, under LB.

▲ **H. S. Wright & Co.**, Inc., 404 Pontius Ave., Seattle, Wash., CA Est. **$12,000,000**, 20 story office bldg., south of Exchange Bldg., SEATTLE, WASH. United Exchange Bldg. Corp., Exchange Bldg., Seattle 4, Wash. CD 12/5.

▲ **H. W. Wright & Co., Inc.**, 404 Pontius Ave., Seattle, Wash., CA Est. **$3,000,000**, 12 story, 115x120 sq. ft. rein.-con. OFFICE BLDG., 5th Ave. and Union St., SEATTLE, WASH. Antero Co., c/o Bullitt Co., 1411 4 Ave. Bldg., Seattle 1, Wash. CD 9/30.

▲ **Nylin P. Hurd Constr. Co.**, 1317 Santiago Ave., Santa Ana, Calif., CA **$1,020,987**, est. $900,000 (8 bidders) frame, stucco, with rein.-con. gymnasium WESTERN HIGH SCHOOL addns. ANAHEIM, CALIF. Anaheim Union High School Dist., Anaheim, Calif. Bids awarded Dec. 5. CD 11/21.

Smith-Campbell Co., 6510 Cherry Ave., Long Beach, Calif. LB $840,000 Charter Oak HIGH SCHOOL COVINA, CALIF. Covina Union High School Dist., 165 W. Dexter St., Covina, Calif. Bids Dec. 10. CD 11/18.

Millie & Severson, Inc., 1485 Canal St., Long Beach, Calif., CA $375,230. 32-lane BOWLING CENTER, COCKTAIL LOUNGE, RESTAURANT, etc. LONG BEACH, CALIF. Dornin, Bock & Dorsey Corp., 1757 Pacific Ave., Long Beach, Calif. Posers, Daley & DeRosa, 366 Atlantic Ave., Long Beach, Calif., archts.

▲ **Price McNemar Constr. Co.**, Box 3157, Van Nuys, Calif. LB $2,492,000 (11 bidders) Community HOSPITAL addns., LONG BEACH, CALIF. City, City Hall, Long Beach, Calif. Bids Dec. 11. CD 10/22.

Twaits-Wittenberg Co., 507 S. Bixel St., Los Angeles, Calif. CA $989,500 (13 bidders) 6 story, rein.-con. steel, 79,000 sq. ft., OFFICE WING addn. to COUNTY COURTHOUSE, SAN BERNARDINO, CALIF. Bd. Supervs., San Bernardino Co. Courthouse, San Bernardino, Calif. Stiles & Robert Clements, 210 W. 7th St., Los Angeles, Calif., archts.-engrs. Bids Dec. 3, awarded Dec. 5. CD 11/8/56.

▲ **Wagner & Martinez**, 181 S. Park St., San Francisco, Calif. CA $1,500,000 40,000 sq. ft. MEDICAL OFFICE BLDGS., consisting of 3 bldgs. adjacent to Palo Alto-Stanford Hospital, on 5 acre site, PALO ALTO, CALIF. Stanford University Bd. Trustees, Palo Alto, Calif. Medical Plaza, Inc., c/o contractor, lessee. Wurster, Bernardi & Emmons, 202 Green St., San Francisco, Calif., archts.

▲ **Haas & Haynie**, 275 Pine St., San Francisco, Calif. CA $10,000,000, 25 story, 315,000 sq. ft. OFFICE BLDG., Front and Pine Sts., SAN FRANCISCO, CALIF. Benjamin & Melvin Swig, Fairmont Hotel, San Francisco, Calif. Wm. Lescaze 252 E. 48th St., New York, N. Y., archt. Henry Powers, c/o H. J. Brunnier's Firm, Sharon Bldg., San Francisco, Calif., engrs. CD 6/20, under Haas and Haynie, as owner.

CANADA

HEAVY CONSTRUCTION—BA

▲ **Ont., Hamilton**—BA 1/8—City, City Hall, filter plant extension, incl. superstructure of filter bldg., substructure and superstructure of mixing chambers and all appurtenant work at Hamilton water purification plant. $2,000,000. CD 1/18/56.

BUILDINGS—LB & CA

▲ **Newman Bros. Ltd.**, 4-A Clark St., Box 193, St. Catherines, Ont., CA $1,093,234, 2 story structure of 2 parts-66 ft. classroom section and 170 X 200 ft. with auditorium, double gymnasium, cafeteria, etc., TEACHERS COLLEGE, TORONTO, ONT. Ontario Dpt. P. Wks., Parliament Bldgs., Toronto, Ont. Bids Aug. 28, awarded Dec. 11. CD 8/2. Gordon S. Adamson & Assocs., 52 St. Clair Ave. E., Toronto, Ont., engrs.

▲ **Hillsdale Constr. Co., Ltd.**, 5950 Cote des Neiges Rd., Montreal, Que., CA $1,000,000 3 story, brick, stone exterior finish 49 APARTMENT BLOCKS, adjacent to Roxboro Housing Development, St. Genevieve de Pierefords, MONTREAL, QUE. St. Genevieve Housing Corp., 5950 Cote des Neiges Rd., Montreal, Que. Emile Bujold, 6746 Molson St., Montreal, Que., archt. Awarded Dec. 9.

▲ **24th St. Corp.**, 6910 Waseman Ave., Montreal, Que., Owner Builds. $1,800,000, low-rental HOUSING, 12 apartment blocks containing a minimum of 14 apartments maximum of 28, 2 and 3 bedroom suites, 24th and Lefebvre Sts., MONTREAL NORTH, QUE. Mayerovitch & Bernstein, 1500 St. Catherine St. W., Montreal, Que., archts.

PROPOSED PROJECTS

WATER SUPPLY

▲ **Calif., Lakewood**—City Council, City Hall, WW. $2,500,000. Boyle Eng. Co., Spurgeon Bldg., Santa Ana, Calif., consult. engr.

▲ **Md.**, Hyattsville-Wash. Suburban Sanitary Comn., Hamilton St., Hyattsville, Stage I: intake raw water (60 m.g. per day) suction line pump station, 1st stage of treatment plant, 30 m.g. p. d., filter and water pumping station, 60 m.g. p. d. pipe lines, traveling water screens, Hunting Hill water station, 15 m.g. p. d., $12,500,000, Constr. 1960; Stage II: traveling water screen, raw water pumping station, 30 m.g. p. d., treatment plant, 30 m.g. p. d., filter water pumping station, 30 m.g. p. d., Hunting Hill water station, 15 m.g. p. d., $4,400,000, Constr. 1970; Stage III: raw water pumping station, treatment plant, filtered water pumping station each 30 m.g. p. d., Hunting Hill station, 15 m.g. p. d., pipe lines, $8,100,000, Constr. 1980; Stage IV: raw water pumping station, treatment plant, filtered water pumping station, each 30 m.g. p. day, $3,400,000, Constr. 1990, above work in Watts Branch, Potomac. Whitman Requardt & Assoc., 1304 St. Paul, Baltimore, consult. engrs.

▲ **Va., Harrisburg**—City, City Hall, impounding dam at Rawley Springs, Rockingham County for water supply. $1,296,500.

▲ **Ontario**—Ontario Water Resources Comn., East Block, Parliament Bldg., Toronto, intake pipe from Lake Erie, near Union; intake well and low lift pumping station; filtration plant, storage reservoir, distr. main Union Ruthven, from Union to Leamington and from Essex to Ruthven, booster station, at Cottam. Bids soon. Project will supply Leamington, Essex, Mersea, Godfield North, Godfield South and Maidstone, $3,100,000.

SEWERS, WASTE DISPOSAL

▲ **Mo., Cape Girardeau**—City, City Hall, sewage treatment plant, extending sewage sys. $1,130,000.

▲ **Mo., St. Joseph**—Bd. P. Wks., City Hall, sewerage sys. and sewage plant, $8,000,000. Black & Veatch, Woods Chapel Rd., Kansas City, Mo., engrs. CD 12/10.

▲ **Va., Vienna**—City, City Hall, lateral and trunk sewers, interceptor sewers and sewage treatment plant. $1,272,500.

BRIDGES

▲ **Illinois**—Chicago South Shore & South Bend Ry., C. R. Merriman, engr. M. W. & Struc., Carroll Ave., Michigan City, Ind., railroad bridge, Calumet River crossing Calumet River S. of Lake Calumet, Cook Co. $4,000,000.

STREETS AND ROADS

▲ **Tex., San Antonio**—City, City Hall, 100 blocks street paving at various locations $300,000. W. F. Pickard, Main Plaza, consult. engr., 100 blocks street participation paving, constr. Dauchey Rd. and reconstr. portion of W. Martin St. $700,000. Donoho & Cross, 1102 Basse Rd., consult. engrs. 100 block street participation paving, plus reconstr. portion of S. Zarzamora St. $350,000. Earl J. Wentworth, 3703 N St. Marys St., consult. engr. CD 10/29.

EARTHWORK, WATERWAYS

▲ **Wash., Houghton**—Beaumont Realty, Inc., 1614 S.E. Lake Washington Blvd., Bellevue, develop 89 acre area on Lake Washington for residential development by dredging of estuaries, planking, piling, streets, utilities and bulkheads. $2,000,000.

AIRPORTS

▲† **Me., Bangor**—MISSILE LAUNCHING BASE—U. S. Eng., 150 Causeway St., Boston, Mass., Bomarc Missile Launching Base, incl. 56 bldgs., 5 mi. outside Dow Air Force Base, $5,350,000. Fay, Spofford & Thorndike, Inc., 11 Beacon St., Boston, Mass., and Alonzo J. Harriman, Inc., 242 Court St., Auburn, Me., consult. engrs. Bids late in April. CD 9/17.

▲† **Mass., Falmouth**—MISSILE LAUNCHING BASE—U. S. Eng., 150 Causeway St., Boston, Bomarc Mis-

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site Launching Base at Otis Air Force Base, **$5,350,000**. Anderson-Nichols & Co., 150 Causeway St., Boston, and Samuel Glaser & Assocs., 234 Clarendon St., Boston, consult. engrs. Constr. 1958. CD 8/21/56.

▲ **Mich., Muskegon**—AIRPORT IMPRVS.—Bd. Supervs. Muskegon Co., County Bldg., defeated $1,500,000 bonds Nov. 26, county airport imprvs. **$4,240,000**. CD 10/8.

FOREIGN

Egypt, Cairo—Suez Canal Authority, Cairo, plans deepening canal. Will ask international bids in December.

PUBLIC BUILDINGS

▲ **Calif., Chula Vista**—SCHOOLS—Chula Vista School Dist., Chula Vista, voted **$1,500,000** bonds Dec. 3, 2 new elementary schools and addns to others. CD 1/26/54.

▲ **Calif., Los Angeles**—CITY COLLEGE—Los Angeles Bd. Educ., 1425 S. San Pedro St., Plans by Allison & Rible, 3670 Wilshire Blvd., 5 bldg. and addn. to library and auditorium at Los Angeles City College. **$4,000,000**. CD 4/8/55.

▲ **Conn., New Britain**—SCHOOL—Town of New Britain, Bd. Educ., 27 Hillside Place, plans by Willard Wilkins, 945 Asylum Ave., Hartford, North Junior High School. **$2,000,000**. Henri B. Van Zelm & Assocs., 1007 Farmington Ave., West Hartford, consult. engrs. Robert S. Loomis, 250 Broad St., Windsor, engr. CD 9/7.

▲ **Conn., Torrington**—SCHOOL—Town, Town Hall, plans by Marcel & Reuer, 1 E. 57th St., New York, N.Y., 1 story campus type high school, Northside Drive Gymnasium, Auditorium. **$4,468,000**. Dr. N. L. Englehardt, 221 W. 57th St., New York, N.Y. consult. engr. CD 7/13/55.

▲ **Ill., Chicago**—HOSPITAL—State, Springfield, mental retarded children's hospital bldg., vicinity Wood and Taylor Sts. **$5,500,000**.

▲ **Ill., Park Ridge**—SCHOOL—School Dist. 207 (Maine Twp. High School Bd. of Educ.) Dempster St. and Potter Rd., voted bonds Nov. 23, 2 story, brick West Main High School, Oakton, Wolf Rd. and Howard Ave. **$6,520,000**. CD 10/18.

▲ **Ky., Louisville**—SCHOOL—Louisville Bd. Educ., 506 W. Hill St., plans by D. X. Murphy & Brothers, 707 Louisville Trust Bldg., Zone 1, brick, rein.-con. Wm. H. Perry School to replace existing school at 1526 Magazine St. **$1,200,000**. E. R. Ronald & Assoc., 554 S. 3rd St., Zone 2, engrs.

▲ **Mass., Wakefield**—SCHOOL—Town, Supt. Schools, 465 Main St., Wakefield, plans by Harold C. Knight Assoc., 73 Tremont St., Boston, Junior High School. **$1,000,000**. CD 6/12.

▲ **Mass., Whitman**—SCHOOL—Towns, Whitman and Hanson, Regional High School Bldg. Comm., Walter Britton, chn., c/o Supt. Schools, Whitman Ave., Whitman, plans by Korslund, LeNormand & Quann, Inc., 506 Washington St., Norwood, Regional High School, off Franklin St., Whitman and Hanson. **$2,000,000**. Constr. 1958.

▲ **Mich., Grand Ledge**—SCHOOLS—Bd. Educ., Grand Ledge School Dist. plans by Louis Kingscott & Assoc., 511 Monroe, Kalamazoo, high school, addn. to elementary schools, altering old high school for Junior High School. **$2,500,000**.

▲ **Mich., Mount Pleasant**—HOSPITAL, etc.—State of Michigan, A. N. Langius, dir. State Bldg. Dpt., Lansing, 75 bed hospital and administration unit, Mount Pleasant State Home Training School. **$1,700,000**. CD 1/29/53.

Mich., St. Charles—SCHOOL—St. Charles Village, St. Charles District, high school. **$625,000**.

▲ **Neb., Omaha**—HIGH SCHOOL—Bd. Educ., 3902 Davenport St., plans by L. A. Daly Co., Insurance Bldg., Lewis and Clark Junior High School, 29th and Burt Sts. **$2,500,000**. CD 11/28/55.

▲ **N. J., Clifton**—SCHOOL—City, City Hall, high school, on site of Old Quarantine bldg. **$4,000,000**. CD 6/26/56.

▲ **N. J., Lambertville**—SCHOOL—Lambertville Regional Bd. Educ., Lambertville, voted **$1,250,000** bonds, Junior-Senior High School, South Hunterdon. Frederic P. Weidersum Assocs., 1051 Bloomfield Ave., Clifton, archts. CD 7/13/56.

▲ **N. J., Sayreville**—SCHOOLS—Bd. Educ. plans by Edwards & Green, 17 South 5 St., Camden, schools. **$5,500,000**.

▲ **N. Y., Long Beach**—MUNICIPAL—City, municipal building. **$1,830,000**.

▲ **O., Cleveland Heights**—SCHOOL—Cleveland Heights Bd. Educ., 1749 Lee Rd., Cleveland, Zone 18, plans by Spahn & Barnes, 1950 Lee Rd., Cleveland, Zone 18, approved 2.75 mill levy Nov. 5, for high school addns. **$2,400,000**. CD 11/11.

▲ **Pa., Bristol**—SCHOOL, etc.—Bristol Twp. School Dist., Bristol, plans by Joseph F. Wigmore, 117 S. 17 St., Phila., Senior High School, athletic field and swimming pool, Levittown, **$3,000,000**. Bids in Spring 1958.

▲ **R. I., Charlestown**—SCHOOL—Towns Charlestown, Richmond and Hoppinton Regional School Planning Comm. Richmond School, Richmond, plans by McConnell & Walker, 3308 Post Rd., Warwick, Charlho Regional High School. **$1,250,000**.

▲ **Tex., Arlington**—COLLEGE—Texas A & M College, College System, College Station, college buildings for Arlington State College. **$2,050,000**.

▲ **Tex., Beaumont**—CLASSROOM, etc.—Lamar State College of Technology, Beaumont, plans by Pitts, Mebane & Phelps, archts.-consult. engrs., 1872 Calder St., 2 story, 22,000 sq. ft. masonry classroom bldg., **$600,000**; another classroom bldg., **$1,400,000**; dormitories-housing, **$1,200,000**. CD 8/24/55.

▲ **Tex., Prairie View**—COLLEGE BLDGS.—Texas A&M College, College System, College Station (for Prairie View A&M College) college bldg. constr. **$2,700,000**.

▲ **Tex., Snyder**—SCHOOL—Snyder Independent School Dist., Snyder, plans by Fred Buford & Assocs., Interurban Bldg., Dallas, Junior High School, **$1,675,000**; elementary school, **$350,000**; warehouse unit, **$100,000**; athletic field, field house and gymnasium, **$200,000**.

▲ **Utah, Salt Lake City**—DORMITORY, etc.—University of Utah, Bd. Regents, 419 State Capitol, plans by William D. Thomas, 19 W. South Temple St., men's dormitory and living center to be located at Fort Douglas part of the campus. **$1,850,000**. CD 10/8. Plans by Woolley & Mohr, 505 Utah Savings & Trust Bldg., book store for university to be located just west of Union Building. **$435,000**.

▲ **Wash., Moses Lake**—HOUSING—U. S. Eng., 4735 E. Marginal Way, Seattle, Zone 4, 200 housing units at Larson Air Force Base under Capehart program, **$3,000,000**.

▲ **W. Va., Charleston**—COURT HOUSE, etc.—General Services Admin., P. Bldgs. Service, 18 and F Sts., Wash. 25, D. C., court house and federal office bldg. **$3,820,000**.

▲ **Ont., Toronto**—RESIDENCE—Victoria College, University of Toronto, Simcoe Hall, plans by Gordon S. Adamson & Assocs., 52 St. Clair Ave. E., 6 story, bsmnt., 76,000 sq. ft. with 5 floors rein.-con. with brick, Women's Residence Bldg., University Ave. **$2,000,000**.

▲ **Que., Montreal**—SCHOOL—Verdun Catholic School Comm., Verdun (Montreal suburb), plans by J. Armand Dutrisac, 1069 Beatty Ave., and Anastase Gravel, 1180 Sherbrooke St. E., High School for Girls, Rielle Ave. **$1,500,000**.

COMMERCIAL BUILDINGS

▲ **Calif., Fresno**—APARTMENTS—C. C. Bland, 5524 N. Vagedes St., 5 story luxury type apartments. **$3,000,000**. Constr. approx. 1 year.

▲ **Colo., Denver**—COLLEGE OF LAW—University of Denver, Campus, Denver, Colo., plans by T. H. Buell & Co., archts-engrs., 730 14th St., approx. 60,000 sq. ft. floor space, College of Law Bldg., 14th and Bannock St., **$1,000,000**. CD 12/6.

▲ **Ill., Chicago**—BANK—Mercantile National Bank of Chicago, 541 W. Jackson Blvd., 15 story bank, northwest corner of Jackson and Clinton Sts. **$5,000,000**.

▲ **Ill., Chicago**—HOSPITAL—Michael Reese Hospital, E. 29th and S. Ellis Ave., plans by Loebl Schlossman & Bennett, 430 N. Michigan Ave., 2 story, bsmnt., brick, Kaplan pavilion, addn. to hospital, 29th and Ellis Sts., **$2,200,000**.

▲ **Ill., Evanston**—OFFICE—Washington National Insurance Co., 1630 Chicago Ave., plans by Graham, Anderson, Probst & White, 201 N. Wells St., Chicago, insurance addn. and garage to present building **$3,000,000**.

▲ **Ind., Elkhart**—SHOPPING CENTER—H. Shanedling Sons Corp., H. M. Garber, gen. mgr., 2025 Nicollet Ave., Minneapolis, Minn., plans by Ackerberg & Cooperman, 1216 Nicollet Ave., Minneapolis, Minn., twenty 90,000 sq. ft. stores, Pierre Morgan Shopping Center. **$1,250,000**. Constr. next spring.

▲ **Ind., Indianapolis**—APARTMENT—32nd Meridian Development Corp., 2216½ N. Meridian St., plans by L. R. Solomon & John D. Cordwell, 61 Superior St., Chicago, Ill., apartment, 32nd and Meridian Sts. **$3,000,000**.

▲ **Iowa Ottumwa**—OFFICE AND DORMITORIES, etc.—Ottumwa Heights College, Sisters of Holy Humility of Mary, Mother Mary Magdalen, C.H.M., Ottumwa, plans by Leo A. Daly Co., 633 Insurance Bldg., Omaha, Neb., central offices and dormitories, classrooms, laboratories, auditorium, library, student union, residences and offices. **$1,000,000**.

▲ **Mass., Brookline**—OFFICE—Julian Cohen & William B. Leatherbee, 235 Harvard St., office building, Boylston St. and Reservoir Rd., Route 9, Lyman Estate, **$1,000,000**. Constr. 1958.

▲ **Mich., Ann Arbor**—Y.M. and Y.W.C.A. BLDG.—Young Men's Christian Assn. & Young Women's Christian Assn., 343 S. Fourth Ave., plans by Colvin, Robinson & Assocs., 206 E. Huron St., Port Huron, Y.M. and Y.W.C.A. Building, incl. 88 residence rooms, E. William St. near Fourth St. **$1,500,000**.

▲ **Mich., Detroit**—HOSPITAL—Mercy Hall Hospital, 269 Mack St., hospital addns. and facilities for treatment of cancer. **$3,000,000**.

▲ **Minn., Wayzata**—SHOPPING CENTER—Thorpe Bros., Inc., 519 Marquette Ave., Minneapolis, Minn. shopping center, incl. 11 shops, at intersection of Hys. 12 and 101, **$1,000,000**.

▲ **Mo., Florissant (P. O. St. Louis)**—SHOPPING CENTER—H. Shanedling Sons Corp., 6505 Wilshire Blvd., Beverly Hills, Calif., (Minneapolis Branch, H. M. Garber, gen. mgr., 2025 Nicollet Ave., Minneapolis, Minn.). Plans by P. J. Hoener & Assocs., 4227 Watson Rd., St. Louis, Mo., Grandview Plaza Shopping Center. **$5,000,000**. Constr. spring 1958.

▲ **N. J., Madison**—DORMITORIES—Drew University, Madison, plans by LaPierre, Litchfield & Partners, 292 Madison Ave., New York 17, N. Y., 2 dormitories. **$1,000,000**.

▲ **N. J., Trenton**—DORMITORIES—River College, 428 E. State St., plans by Alfred Clauss, 114 W. State St., 1 womens and 1 mens dormitories, **$1,000,000**. CD 11/25.

▲ **N. D., Grand Forks**—DWELLINGS—Arrowhead Properties, 1518 Walnut St., plans by Wells & Denbrook, 1701 Cherry St., constr. 20 fourplexes. **$1,000,000**.

▲ **O., Cincinnati**—HOUSING—Chesley Dev. Co., 5945 Ridge Ave., 60 homes on extension of Alex Dr. **$1,000,000**. Ed. Niemeier, 4484 Harrison Ave., consult. engr. Constr. Spring 1958.

▲ **O., Cincinnati**—HOUSING—Robert Giesken, 5252 Race Rd., fifty-five 1 story, bsmnt., brick homes, Bridgetown Rd. **$1,000,000**. Ed. Niemeier, 4484 Harrison Ave., consult. engr. Constr. Spring 1958.

▲ **O., Cleveland Heights**—APARTMENTS—Kenilworth Estates, Inc., Ben F. Stormes, pres., 3134 Euclid Ave., Cleveland, Zone 15, apartment development consisting of 5 units, one 7 story, two 6 story, and two 12 story bldgs. all with covered garages, north side Euclid Heights Blvd., at top of Cedar Hill. **$4,000,000**.

▲ **O., Cleveland Heights**—NURSING HOME—Benjamin Rose Institute, Rose Bldg., Cleveland, Zone 15, O. plans by Garfield Harris, Schafer, Flynn & Williams, 1740 E. 12th St., Cleveland, Zone 14, O. 4 story Nursing Home. **$2,000,000**. Bids in late spring or early summer. CD 8/14.

▲ **Pa., Harrisburg**—DWELLINGS—Hanover Housing Corp., 810 N. Charles, Baltimore, Md., 258 dwellings at Cameron Estates, Cameron Park. **$2,000,000**.

▲ **Tex., Abilene**—CHAPEL—Hardin-Simmons University, Administration Offices, Abilene, chapel. **$1,500,000**.

▲ **Utah, Provo**—COLLEGE BUILDINGS—Latter Day Saints Church, 47 E. S. Temple, Salt Lake City, plans by Lowell E. Parrish, 325 Dooly Bldg., and Arnold H. Ehlers, 125 N. Main St., both Salt Lake City, Utah, college bldgs. at Brigham Young University. **$14,000,000-$15,000,000**.

▲ **Wash., Seattle**—SHOPPING CENTER—Southcenter Corp., c/o J. B. Douglas, Northgate Co., 310 E. 110 St., shopping center in area south of here. **$10,000,000**.

INDUSTRIAL BUILDINGS

▲ **Ind., East Chicago**—PLANT—Sinclair Refining Co., 3500 Indianapolis Blvd., oil processing plant. 3500 Indianapolis Blvd. **$1,000,000**. E. B. Badger & Sons, 75 Pitts St., Boston, Mass., consult. engrs. CD 6/12/56.

▲ **Iowa, Des Moines**—PLANT—Meredith Publishing Co., 17th and Locust Sts., plans by Brooks-Borg, 815 Hubbell Bldg., 1 story, 660x708 ft., precast concrete panels, aluminum panels, steel frame publishing plant, 63rd and Park Ave. **$10,000,000**. CD 5/22.

▲ **Ky., Louisville**—PLANT—National Carbide Co., Bell's Lane, Louisville, plant for reclaiming lime from sludge, to be located Camp Ground Rd. **$2,000,000**. CD 4/20/50.

▲ **Okla., Cushing**—REFINERY—Kerr-McGee Oil Industries, Cushing, refinery expansion. Over **$1,000,000**. Litwin Eng. Co., Cushing, Central Bldg., Wichita, Kan., consult. engr. CD 11/26/57.

▲ **Pa., Pittsburgh**—WAREHOUSE, etc.—The Kroger Co. E. 7th St., Cincinnati, O., 1 story, 100,000 sq. ft., brick, block, warehouse and office addn. **$1,000,000**.

▲ **Tex., Deer Park**—PLANT—Diamond Alkali Co., Deer Park, 40-ton daily capacity, acetylene plant. **$10,000,000**.

▲ **Ont., Galt**—PLANT—Franklin Mfg. Co. Ltd., 65-22 Ave. N.E., Minneapolis, Minn., U.S.A., c/o George Loker, 3 Water St. S., Galt, Ont., 200,000 sq. ft. plant for construction electric transformers. **$1,000,000**.

UNCLASSIFIED

▲ **Calif., San Francisco**—PIER AND HARBOR IMPRVS.—San Francisco Port Auth., Ferry Bldg., bond election Nov. 4, 1958, pier and harbor imprvs. **$50,000,000**. CD 7/25.

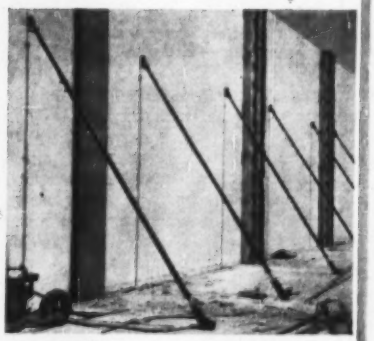
▲ **Ind., Bloomington**—FIELDHOUSE, etc.—Indiana University, Bd. Trustees, J. A. Franklin, vice pres. and treas., Bloomington, plans by Eggers & Higgins, 100 E. 42 St., New York, N.Y., 200 x 400 ft. steel, concrete and masonry fieldhouse, 297 x 334 ft., gymnasium and 600 x 700 ft. stadium, **$13,000,000**. Clark & Rapuana, 145 E. 32 St., New York, N.Y., consult. engrs. Syska & Hennessy, Inc., 114 E. 39 St., New York, N.Y., mech. engrs. Severud, Elstad & Krueger, 415 Lexington Ave., New York, N.Y., struc. engrs. A.M. Strauss, Strauss Bldg., Fort Wayne, assoc. archt., and Ammerman, Davis & Stout, K.P. Bldg., Indianapolis, assoc.-engrs. CD 4/9/56.

▲ **Mo., St. Louis**—MAUSOLEUM—Archdiocesan Bldg. Comm., Rev. James R. Hartnett, exec. secy., 3810 Lindell Blvd., Zone 8, plans by Harley, Ellington & Day, 153 E. Elizabeth, Detroit, Mich. 2 story, 67 x 200 ft., stone, granite, concrete, mausoleum addn. in Calvary Cemetery. **$1,000,000**. Bids early in 1958. CD 11/21.

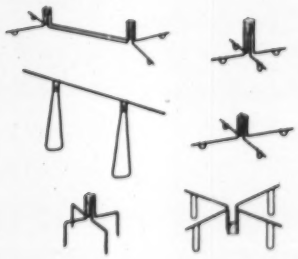
▲ **Tex., Arlington-Grand Prairie**—SPORTS CENTER—Great Southwest Corp., 401 Wynnewood Village, Dallas, plans by A. B. Swank, 5610 Cedar Springs, Dallas, 293-acre sports center located between Arlington and Grand Prairie. **$34,000,000**. CD 10/10.

(Proposal Advertisement see p 81)

PRECAST PANEL 32 ft. high by 18½ ft. wide has two large window areas.



SUPERIOR ADJUSTABLE BRACES with exclusive pivoting action, permit quick and easy alignment of panels.



SUPERIOR accessories for tilt-up construction are designed for fast and efficient handling of all types of precast panels and structural members.

SUPERIOR "Pick-Up" Inserts, Brace Anchors, and Adjustable Braces have been used and proven on literally thousands of projects, not a few of which were unique in design. With a background of such experience, the recommendation of our engineers as to location and types of Inserts and Anchors is valuable and reliable.

For details request copy of Bulletin TU-3

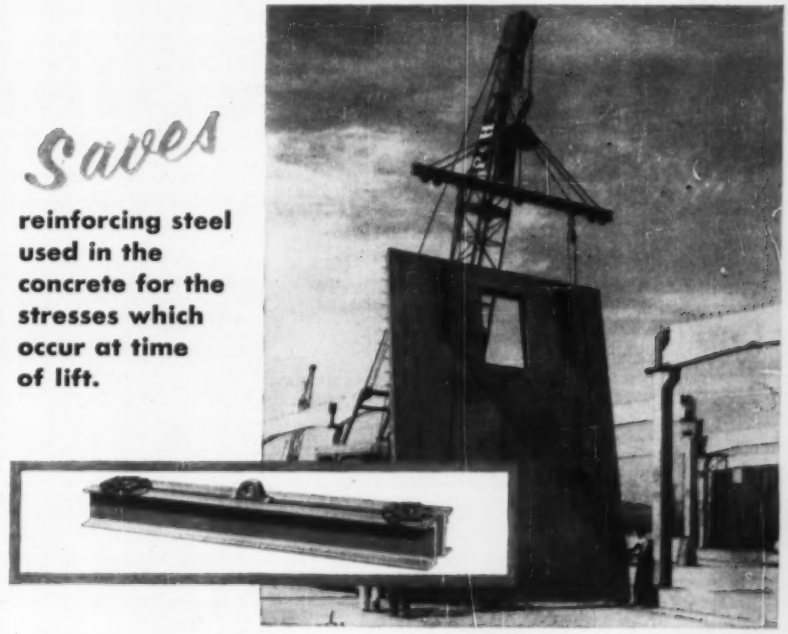
Superior leads again!

NEW!

STRESS EQUALIZER SYSTEM REDUCES LIFTING STRESS IN HIGH TILT-UP PANELS

Saves

reinforcing steel used in the concrete for the stresses which occur at time of lift.



On any tilt-up job the critical time is, of course, at the point where the load is being transferred from tension to shear, and especially so on panels over 20 ft. high. SUPERIOR Stress Equalizer System was developed to provide the most efficient method of handling these larger tilt-up panels.

Two advantages of this system are: (1) Less concrete reinforcing steel is required for stresses at time of lift; (2) Permits use of simplified crane operation instead of vertical three point lift which requires a rather elaborate system of rigging and which slows down crane operations considerably.

SUPERIOR Stress Equalizer Beams (shown in inset photo above) are now available on a nominal rental basis. Our engineers will make recommendations for the most advantageous use of this system, based on our long experience in the field of tilt-up construction. Write for more details.

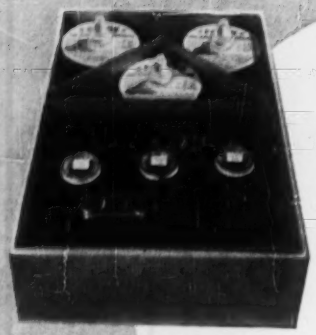
SUPERIOR CONCRETE ACCESSORIES, INC.

9301 King St., Franklin Park, Ill. *(A Suburb of Chicago)*

Pacific Coast Plant
2100 Williams St., San Leandro, Calif.

New York Office
1775 Broadway, N. Y. 19, N. Y.

To keep machinery on the job . . . and jobs on schedule



Globe "packages" instant battery replacement at any service point!

Dead, worn-out batteries mean costly down-time. For contractors who want to *keep 'em rolling*, Globe's creative battery packaging provides the fastest, surest replacement . . . with rugged top-quality *spinning power* batteries.

Dry-charged batteries shipped with all ingredients packed together — including unbreakable bottles with correct amount of electrolyte — for swiftest activation of batteries at any service point! Keep complete inventories anywhere — batteries are inert, then brand new at moment of activation.

Tough, thin-wall plastic case: 96% more resistance to impact . . . 21% more acid capacity . . . 40% more resistance to acid penetration.

Count on a Globe-built battery everytime to keep machinery on the job — jobs on schedule — profits on the rise!

SPINNING POWER
GLOBE-UNION
SPLIT-SECOND STARTING

GLOBE-UNION INC.

MILWAUKEE 1, WISCONSIN

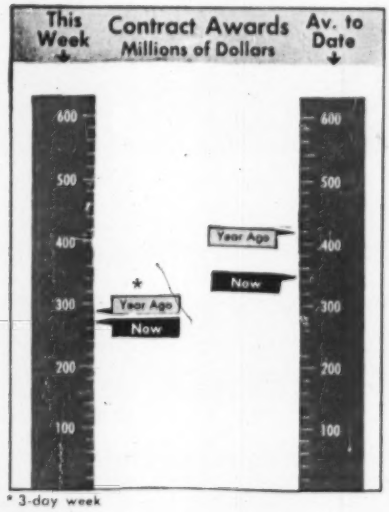
*ATLANTA, GA., *DALLAS, TEXAS, *EMPORIA, KANSAS, *HOUSTON, TEXAS, *LOUISVILLE, KY., *MEDFORD, MASS., *MEMPHIS, TENN., *MILWAUKEE, WIS., *MINERAL RIDGE, OHIO, *PHILADELPHIA, PA., *REIDSVILLE, NO. CAROLINA, *SAN JOSE, CALIF., *HASTINGS-ON-HUDSON, *LOS ANGELES, CALIF., OREGON CITY, ORE., AJAX (ONTARIO) CANADA

*—producing dry-charged batteries

If it's Petroleum powered there's a GLOBE-BUILT BATTERY right from the start!

Construction Scoreboard

Activity this Week



* 3-day week

AMOUNT OF CONTRACTS LET

By Ownership	This Week	Cum. 52wks 1957	Chge '56-'57 %
	millions		
Federal	$16.4	$2,184.9	+29
State and Municipal	135.2	7,415.4	+14
Total Public	151.6	9,600.3	+17
Total Private	122.2	8,385.5	−38
U. S. Total	$273.8	$17,985.8	−17
By Type of Work			
Waterworks	$11.9	$368.9	+ 4
Sewerage	20.2	556.2	− 4
Bridges	6.5	781.3	+26
Highways	48.4	2,964.6	+20
Earthwork, Waterways	8.7	969.3	+33
Buildings:			
Public, Excl. Housg.	26.9	2,352.7	+12
Public Housing	18.0	642.2	+102
Private Housing	33.2	3,040.7	−43
Commercial	31.2	1,754.5	−14
Industrial	55.5	3,080.8	−42
Unclassified	13.3	1,474.6	−20
U. S. Total	$273.8	$17,985.8	−17

NOTE: Minimum size projects included are: Waterworks and waterways, $44,000; other public works, $73,000; industrial buildings, $93,000; other buildings, $344,000.

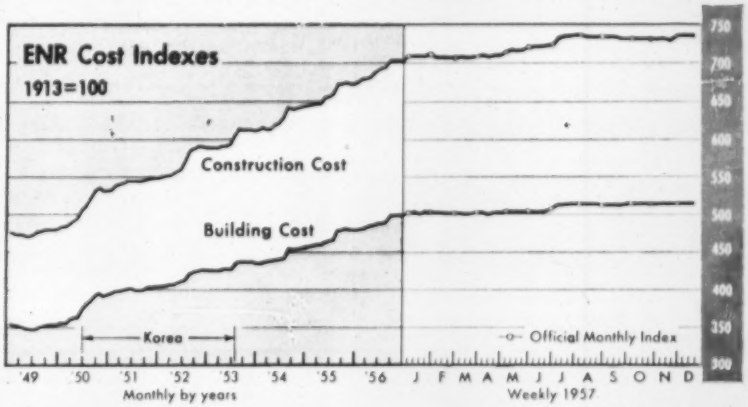
NEW CAPITAL FOR CONSTRUCTION

	Week of Dec. 19	Cum. 51 wks 1957	Chge '56-'57 %
	millions		
Corporate Securities	$25.8	$5,676.3	+21
State and Municipal:			
All Except Housing	96.1	5,512.0	+19
Housing	4.0	183.8	+102
Federal Loans	4.1	193.5	+27
Federal Aid	...	2,161.2	+102
Total Nonfederal	$130.0	$13,726.8	+29
Federal Appropriations:			
In U. S.	...	$2,777.0	−20
Outside U. S.	...	29.0	+82
Total New Capital	$130.0	$16,532.8	+17

Cost Indexes as of Now

ENR INDEXES (1913 = 100), 20-cities' average	Week of Dec. 19 1957	% Change from Nov. 21 1957	% Change from Dec. 20 1956
Construction Cost	737.54	+0.1	+4.6
Building Cost	516.96	+0.1	+3.4

To convert above indexes to 1926 = 100: Divide Construction Cost by 2.080; Building Cost by 1.850
1949 = 100: Divide Construction Cost by 1.770; Building Cost by 3.518



BACKLOG OF PROPOSED HEAVY CONSTRUCTION

	Nov. 30 1957 (millions)	Percent Change from last Month	Year
Total U. S. (ENR reported)	$110,817	+0.5	+6.7
By Ownership—			
Private	46,701	+0.5	+7.0
State & Municipal	50,177	+0.6	+7.5
Federal	13,939	+0.1	+2.4
By Type of Work—			
Waterworks	2,400	+1.5	+8.5
Sewerage	3,343	+1.0	+5.0
Bridges	3,285	+0.5	+11.6
Highways	13,012	+1.5	+4.6
Earthwork, Waterways	12,386	−0.4	+8.2
Public Buildings	20,107	+0.02	+6.4
Industrial Buildings	16,774	+0.6	+3.8
Commercial Buildings	20,091	+0.5	+10.8
Unclassified, Private	9,836*	+0.2	+5.4
Unclassified, Public	9,583	+0.8	+4.6

* Includes private bridges, $84 million

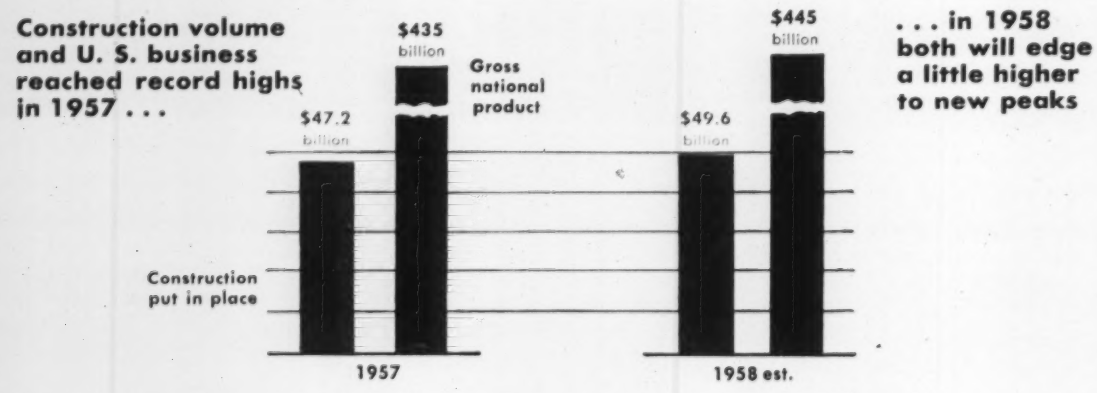
FLOW OF NEW PROJECTS INTO THE BACKLOG

	1957 Nov. (millions)	11-months	Percent Change from '56 Nov.	Year Cum.
Total U. S. (ENR reported)	$1,370	$19,033	−53.8	−20.3
By Ownership—				
Private	522	8,374	−50.6	−30.1
State & Municipal	742	8,925	−59.8	−10.9
Federal	106	1,734	+78.4	−8.4
By Type of Work—				
Waterworks	62	453	−30.1	−9.0
Sewerage	60	556	−39.6	−1.3
Bridges	89	617	−7.0	+40.8
Highways	272	2,242	−68.4	−4.5
Earthwork, Waterways	15	1,613	−70.9	+108.5
Public Buildings	255	3,995	−58.9	−14.8
Industrial Buildings	215	3,067	−61.2	−45.1
Commercial: Mass Housing	138	2,020	−35.1	−32.6
Other Building	139	2,321	−37.3	−5.4
Unclassified, Private	30	966	−56.3	+2.4
Unclassified, Public	95	1,183	+5.7	−55.1

FLOW OF PROJECTS OUT OF BACKLOG INTO CONTRACTS

Total U. S. (ENR reported)	$649	$8,861	−20.8	−2.9
By Ownership—				
Private	209	3,319	−46.5	−32.3
State and Municipal	357	4,297	−0.1	+26.1
Federal	83	1,245	+16.6	+53.2

THE LONGER LOOK:


Construction volume and U. S. business reached record highs in 1957 . . .
$47.2 billion
$435 billion
Gross national product
Construction put in place
1957
$49.6 billion
$445 billion
1958 est.
. . . in 1958 both will edge a little higher to new peaks

Data: U. S. Depts. of Commerce & Labor; McGraw-Hill Dept. of Economics

Some Gains Seen for Economy Next Year

U.S. business and the construction industry will enter 1958 with prospects of small gains, at best, over 1957. Dollar increases in gross national product and construction put in place may be barely enough to offset higher prices.

It's not that prices will climb as much as they have in the last two years. The likely increase for the economy as a whole is only 1% or so. But not many industries will be able to chalk up a much bigger increase than this in sales.

It's clear, indeed, that some industries are already headed down and that the economy is in for further downward pressure before it resumes the growth rate of the past decade. For 1958 any chance of an advance by the economy overall hinges on those sectors that will continue to move ahead—and on chances for a turnaround in slumping industries by next autumn or winter.

• **Capital spending drop**—The drop in capital spending will be one of the major forces holding business down next year. The fall survey of the McGraw-Hill Department of Economics (ENR Nov. 14, p. 143) reported that business plans to cut outlays on new plants and equipment by 7% in 1958 and that manufacturing companies will spend 16% less.

This will mean a big dip in industrial construction, something ENR contract award figures have indicated was coming for more than a year. The impact of lower capital spending will also hit machinery producers, whose orders and backlogs have tumbled since late summer.

Business is hurting from cutbacks in other areas, too. The Defense Department's economy effort, begun during the summer when expenditures seemed to be getting out of control, has trimmed military orders in the aircraft and electronics industries. The plan was to cut defense spending from an annual rate of $42 billion last spring to $38 billion by spring 1958.

The economy move in defense, however, was pre-Sputnik. Increased orders for missiles procurement are expected later in 1958, but it will be several months before these help payrolls.

• **Inventory reduction hurts**—A broad effort by business to reduce inventories is another factor holding down orders. This has been going on for several months among users of steel, nonferrous metals and textiles. Companies in lines ranging from auto manufacturing to apparel retailing are basing orders cautiously on short-term needs.

Even retail sales, which had been a strong point in the business outlook until late summer, have slipped a little lately. Though the flu epidemic and bad weather have been blamed for some of the drop, consumers just don't seem quite so eager to spend. Disappointing sales of 1958 autos are one example.

These depressing events have shown up already in declines in several key economic indicators. Industrial production, which hit a record 147 (1947-49 = 100) last December and was 145 in August, slid to 141 in October and 139 in November.

The drop in production has meant lower manufacturing employment and a sharp rise in unemployment. In November unemployment rose almost 700,000. Normally it increases again after the Christmas retailing season, and unemployment could be close to 4,000,000 by February—a level it has not reached since the 1949-50 recession.

Personal income likewise has been hit by the dip in manufacturing activity. It dropped a half-billion dollars—from $345.9 billion to $345.4 billion—between October and November.

• **Some sectors to gain**—Though these signs point to lower business activity during at least the early months of 1958, they don't mean the bottom is going to drop out. Even some of the weak areas like capital spending, are high by the standards of any year before 1956. And some economic sectors will be gaining.

In construction, the low point in residential building was reached last spring, and a return to over 1,000,000 private starts in 1958 seems fairly certain. Also, the federal highway program is starting to move from blueprints and hearings into steel and concrete.

The relaxing of tight money—signalled by the early-November cut in the Federal Reserve discount rate—could prove a big help in 1958 for both homebuilding and state-local projects.

Markets should be better for both mortgages and municipal bonds.

• **Some wage increases due**—Wage increases probably will not be as great as in the last two or three years because profit-squeezed employers will show more resistance. But several million workers are already in line for increases under long-term contracts, and there will be major negotiations in the auto industry. These increases will help bolster consumer income.

If declining business gives Washington a real scare, there will undoubtedly be further easing of credit, and Congress may even put through a tax cut at the risk of unbalancing the budget.

Finally, some of the bearish elements in the immediate business outlook will have only a short-run impact on the economy. Defense spending, now going down, will almost surely be moving up by summer or fall. If business is successful in trimming inventories over the next few months, return to a normal flow of orders would be a tonic for the steel, nonferrous and textile industries.

In capital spending the adjustment may take a little longer, as industry waits for sales and production to catch up with the recent leap in capacity. But even here, energetic research programs and the promise of expanding markets in the early 1960s give hope of an early revival.

Missile Facilities Speeded

Construction of missile facilities in New Mexico and the adjacent El Paso-Ft. Bliss, Tex., area has been placed on a "crash" basis, the District Office of the Corps of Engineers reported in Albuquerque, N. M. The speedup, after many months of inactivity, will result in contracts for $64.5 million in military construction during the next seven months. More than 65% is for installations involving guided missiles. This sudden change of pace apparently is the result of Russian successes in rocket and satellite fields (ENR Dec. 19, p. 21).

The money will build basic facilities, such as buildings, laboratories, and rocket launching pads at New Mexico missile centers. It will also supply basic construction at atomic weapon bases.

The Corps of Engineers in some instances has reduced the period between advertising and opening of bids. Contractors usually have 30 days to prepare bids. For some missile base contracts this now has been cut to 20 days.

The first major bid openings since last July 1, the beginning of the present fiscal year, were held only a few days ago. Seven more openings for December were scheduled. Another 13 projects have been advertised this month for opening in January. These 20 projects are expected to cost $15 million to $20 million.

Construction during the rest of this fiscal year ending June 30, includes $30.5 million for military projects at White Sands Proving Grounds in southern New Mexico; at Ft. Bliss; and at Sandia Base, near Albuquerque.

Present estimates call for $34 million in Air Force construction at Holloman Missile Development Center, Almogordo, and at the following Air Force bases: Kirtland, at Albuquerque; Walker, at Roswell; Biggs, at El Paso.

Described as "fairly firm," were: White Sands Proving Grounds, including the Army ballistic missile agency headquartered at Huntsville, Ala., $16.5 million; McGregor Range in southern New Mexico, $13 million; and Sandia Base, $1 million.

Tentative projects for the Air Force are planned at Holloman Base (about $12.5 million), Walker Base ($13.5 million), Biggs Base ($6 million); Kirtland Base ($2 million).

Another $7 million for a Capehart housing project at Ft. Bliss, still awaiting a contract award, was not included in the totals.

State Uses Consultants For 75% of Design Work

About 75% of the design work on Rhode Island state highways is done by consulting engineers, according to Joseph M. Vallone, state public works director. The reason: The number of department engineers has not kept pace with the growth in highway construction. Though highway expenditures multiplied almost five-fold in four years, he said, not a single new regular employee was added to the engineering staff until this year, when several right-of-way agents were hired.

A new state employee pay plan that will pay higher salaries to engineers might bring the share of work done by consultants and by state engineers into better balance, Mr. Vallone pointed out. But while the plan's higher pay schedules should attract more engineers to the highway departments, Mr. Vallone believes that consultants will be necessary for some years to come.

The Busy Bostonians

Industrial, commercial building strong in area

Metropolitan Boston is the scene of a solid $275 million in commercial and industrial construction, a Greater Boston Chamber of Commerce survey has disclosed. The figure includes work both under way and planned for the immediate future in 83 towns and cities, including Boston itself. Some 77 projects of over $100,000 each are included in the inventory tallied from questionnaires sent to building officials in towns and cities.

By far the biggest construction job in the survey is the $100 million Prudential Center in Boston's Back Bay area (ENR Jan. 31, p. 75). Borings for the project now are being made. The ultimate cost of the center may greatly exceed initial estimates, Prudential officials have indicated.

• **Tally for the year**—The survey also found that 24 firms had completed construction worth $12.2 million in the metropolitan area this year. Still in progress is $52.1 million of construction comprising 11 projects, seven of them in Boston proper.

Building permits were issued for $57.5 million in construction during the first nine months of 1957. This figure is about the same as that for the comparable period of 1956.

• **New year plans**—Six firms told the chamber of plans for $51 million in construction in 1958. This figure does not include money Prudential will spend in the start up of its center. Five of the firms are in Boston, the sixth being Raytheon Manufacturing Co. in Waltham. The Boston projects include a $15 million hangar at Logan International Airport, two parking garages, a bank, a building for Blue Cross-Blue Shield and two structures whose owners are not yet identified.

As most of this construction is in Boston, the total next year may be much enlarged by later announcements from outlying districts encircling Boston proper.

Though building permits have not been issued to the six companies, the chamber's information is regarded as authoritative, as the organization has come to occupy a key position now that industry is settling thickly in the 20 mile radius comprising suburban Boston.

(B&F continued on page 76)

High Costs Hinder A-Power Development

Meetings of Congressional, governmental, industry representatives fail to provide problem's solution

The question of where this country's civilian atomic power program stands and where it is headed is surrounded by a multiplicity of problems—and construction and design costs are the most crucial ones.

Out of a welter of meetings involving the Atomic Energy Commission, the Congressional Joint Committee on Atomic Energy, electric utilities, reactor manufacturers, designers, and engineers, there still has not emerged any clearcut definition of objectives of the program or of means of carrying out the objectives.

All the activity has been sparked by mounting evidence that atomic power development is extremely costly and that the day of economic operation of nuclear power plants is a long way off in the U. S. This, in turn is leading to doubts that private industry can continue to take the lead in developing atomic power without either greater federal financial assistance,or abdicating its present role to the federal government.

Little of a concrete nature has yet emerged from the series of closed meetings between the Atomic Energy Commission, first with utility company representatives, then with reactor and equipment manufacturers, and finally with reactor architect-engineers and consultants.

• **Still a vague issue**—Skimpy reports this week indicate that no unified opinion or view was put forth by the utilities, and AEC suggested no program for the utilities to consider.

Manufacturers, many of whom have been saying privately that a federal subsidy is a must to keep the industry in business, apparently were less specific in the meeting although they were agreed that more federal money is needed, either in the form of orders from the government or as help to business.

AEC's views are not clear. Chairman Lewis Strauss has said both that the program needs a new step forward and that the present program is adequate.

Probably the most significant move in the whole picture has come from Chairman Carl T. Durham of the Joint Committee.

Rep. Durham, in a letter to Mr. Strauss, suggested consideration of a 10 year demonstration program involving guarantees of federal financial assistance to the industry—both to those who build and those who operate nuclear power plants.

The Durham letter was an open appeal to Mr. Strauss for the joint Committee and AEC—involved in a running feud in the past—to get together in working out the program and its objectives. The next move is clearly up to Mr. Strauss.

• **Democrats at work**—In the meantime, Joint Committee Democrats are working on their own bill to accelerate reactor development. From the statements of some Joint Committee Democrats, it now apears certain that this bill will involve both federal construction of reactors and a formula for financial assistance to private industry groups.

Sen. Clinton P. Anderson, vice chairman of the Congressional Joint Committee and Rep. Durham, chairman, have appealed directly to President Eisenhower for a speed up in all phases of atomic energy development.

In a letter, the Congressional leaders say that steps taken in recent weeks to speed missile development and other scientific efforts to meet Russian technological advances were welcome but "much more remains to be done."

Behind all this activity lies the evidence that has emerged from a series of other meetings in recent weeks, and from statements by persons concerned in atomic power developments. This evidence is that atomic power development is slowing down because of higher than anticipated costs, lack of economic incentive, and the realization that it will be 8 to 20 years before atomic power becomes economically competitive with conventional fuels.

A plan whereby the government can subsidize to a greater extent than in the past the building and operation of nuclear power plants is being worked on. Manufacturers in particular have been speaking out for greater subsidies, because many of them have lost heavily on fixed-ceiling contracts. And utilities are becoming apprehensive at the cost of operating nuclear power plants at a loss for several years.

The alternative to greater subsidies would be federal construction of nuclear power plants.

Rep. Durham says a 10 year demonstration power program is the answer; it would begin to take over where the present 5 year program leaves off.

The demonstration program should provide long-term assurance to private atomic equipment companies and private public power organizations that a stable and steady amount of government financial support and assistance for atomic power development will be available.

Monorail Moves Ahead

Detroit approves plan for six-route, 54 mile system

A planned 54 mile monorail system for Detroit has been tentatively O.K.'d, with formal adoption of six major routes.

The proposal approved by the Detroit Rapid Transit Commission, calls for construction of overhead transit on E. Jefferson, Gratiot, Woodward, Grand River Michigan and W. Fort Streets, at an estimated cost of $255.8 million. Ultimately, the monorail system would be extended to the suburbs of Mt. Clemens, Pontiac, Farmington, Ypsilanti and Rockwood. These expansions would bring the total system to 144 miles.

The Transit Commission notified Detroit's mayor of its action, but said it would not submit its 150 page report until January, to allow time for minor modifications and printing. The mayor will schedule a meeting with the commission after the report arrives and then meet with the six departments involved in traffic and transportation. In approving the report unanimously, the four transit commissioners said the proposal is "feasible and will solve the city's prime problem." They said that the plan contemplates integration of the Detroit Street Railway System with the Rapid Transit system, the coaches serving as surface feeder lines to the 88 monorail stations along the six routes within the city.

Cost of the system would be met by issuing $101.9 million in city faith and credit bonds, combined with a mortgage or revenue bond issue of $153.8 million.

Heads of the Detroit Street Railway, Streets & Traffic and Public Works Departments have strenuously opposed such a rapid transit system, and instead have pushed for speedy construction of an expressway network that would provide "rapid transit" for DSR coaches and private automobiles.

Cement Price Boosts Promised

The construction industry can brace itself for higher costs in another one of its basic materials—cement.

Effective January 1, cement mills in at least 19 states will post higher prices on cement, with the increase running from 10-15 cents per bbl. Most of the increases reported are 15 cents per bbl.

Nearly all of the price hikes were announced by mills outside the Middle Atlantic and New England regions. But these regions are not escaping completely unscathed, for at least one mill at Buffalo, N. Y., and some western Pennsylvania mills may give their prices an upward shove.

Increases have been announced at one or more of the following company mills:

Consolidated Cement Corp.
Lehigh Portland Cement Co.
Lone Star Cement Corp.
General Portland Cement Co.
Medusa Portland Cement Co.
Universal Atlas Cement Co.
Ideal Cement Co.
Marquette Cement Manufacturing Co.
Penn-Dixie Cement Corp.
Giant Portland Cement Co.

The price advance schedules cannot be described as uniform. The announcements were generally spotty and almost all of the companies listed levied the hike on a mill region basis such as Penn-Dixie, which early this month said that its 15 cents per barrel boost would be effective at seven of its 10 plants.

Marquette Cement was among the later firms making its announcement and one of a few to qualify the news.

A spokesman for that company said it expects to follow the industry pattern of a 15 cents a barrel increase at five of its eight plants as of January 1. He added, however, that the company is not sure the increases will hold in view of the "spotty patterns to date." Increases will be levied at the firm's plants in Illinois, Missouri, Iowa, Ohio and Wisconsin.

The industry's price boosts were blamed on rising costs, including wage hikes granted after last summer's strike settlement.

Mill Price Hikes for Portland Cement Jan. 1, 1958 by Area

Reported to ENR Dec. 23

State & City	Price Hike Per Bbl. Cents
Alabama	
Leeds	+15
Mobile	+15
California	
Redwood City	+15
San Juan Bautista	+15
Colorado	
Boettcher	+10
Portland	+10
Florida	N.A.
Georgia	
Clinchfield	+15
Illinois	
Oglesby	+15
Indiana	
Buffington	+15
Iowa	
Des Moines	+15
Kansas	
Fredonia	N.A.
Independence	+15
Michigan	
Cement City	N.A.
Petoskey	+15
Missouri	
Cape Girardeau	+15
St. Louis	+15
Nebraska	
Superior	+15
New York	
Buffalo	+15
Ohio	
Fairborn	+15
Paulding	N.A.
Sandusky	N.A.
Superior	+15
Toledo	N.A.
Oklahoma	
Ada	+10
Pennsylvania	
Universal	+15
Wampum	N.A.
W. Winfield	+15
Tennessee	
Kingsport	+15
Richard City	+15
Virginia	
Lone Star	N.A.
Wisconsin	
Manitowoc	N.A.
Milwaukee	+15

N.A. means amount of increase not yet reported

Crossing Bridges

Spans over five major rivers pushed by officials

Plans for four major bridges were shaping up last week as a feasibility survey of one was begun, firm location of another was established, a design agreement for a third was signed and the way was cleared for advertising for construction bids on the fourth.

In North Carolina, the State Highway Department signed a contract with Parsons, Brinckerhoff, Hall & Macdonald, consulting engineers of New York City, for a feasibility study on toll bridges across the Alligator and Cape Fear Rivers. The completed report is due in December, 1958, when traffic data for all seasons will have been obtained. This report will include location recommendations, cost estimates and the feasibility of using tolls to repay construction costs.

The proposed Alligator River bridge would cross the river between Sandy Point and East Lake to tie in with the recently completed $2.5 million Croatan Sound Bridge.

The Cape Fear River bridge would be located at Wilmington, where some of the heaviest traffic in the state now uses the present outmoded bridge to create a traffic bottleneck in the city.

Should it be decided to build the two costly bridges and to pay for them through tolls, it would be a departure from North Carolina's policy of having no publicly owned toll bridges, roads or ferries.

• **Ohio River bridge**—Agreement by Kentucky, Ohio and the City of Cincinnati on the location of the proposed Cincinnati-Newport bridge has been sent to the U. S. Bureau of Public Roads for approval. The decision reached was to place it at Eggleston Ave. on the Ohio side and between Linden and Park Avenues on the Newport side.

Establishment of this location is vitally important in determining the interchange patterns on the Kentucky side of the new Cincinnati-Covington bridge to be built next year. It is planned to link the two new bridges on the Kentucky side with a traffic distributor paralleling the Ohio River.

• **Mississippi River bridge**—In Little Rock, highway officials saw the possibility of advertising for construction bids early next year on a Mississippi River bridge at Helena now that financial allocations have been made by the federal government and through bond issues by the states of Arkansas and Mississippi.

The $14.5 million bridge now depends on the drawing up of an agreement by the two states on joint maintenance and other minor items, and approval of the Bureau of Public Roads on the latest financial proposals.

• **Hudson River bridge**—The Port of New York Authority has retained the engineering firm of Ammann & Whitney of New York City to design the New Jersey approaches to the projected $182 million six-lane lower deck of the George Washington Bridge, which crosses the Hudson River. Construction is expected to begin next summer, with the lower deck opened to traffic in 1962.

Contractors Ask for Unity of Purpose

Union-contractor harmony pays off in Texas; community of interest stressed at labor convention

"We have the best working conditions in the United States today between contractors and a union, and it is because of right thinking."

The statement was made this month by W. F. Appleton, president of the Fort Worth chapter of the Painting and Decorating Contractors of America. It was based on the results achieved through mutual understanding and cooperation between labor and management—two things that were described as essential to the welfare of the construction industry by employer representatives at the recent building trades' convention in Atlantic City.

The Texas harmony referred to by Mr. Appleton exists between Local 318 of the painters union, one of the largest of the Fort Worth building trades, and the 46 member Painting Contractors Association. It stems from a series of social dinners, alternately sponsored by labor and management, through which both sides, according to Mr. Appleton, "began to view each other as human beings and recognize their mutual needs and obligations to the public."

One of the tangible results has been disappearance of tension in collective bargaining and an end to lockouts, strikes and strife. Out of it came a new three year labor contract last April, removing all restrictions on use of labor-saving devices and including a cost-of-living escalator clause.

• **National plea**—The Texas approach typifies the unity of purpose and action called for by leaders of industry and labor alike at Atlantic City.

In addressing the Building and Construction Trades Department convention, Charles Haxby, president of National Constructors Association, referred to the department's constitutional objective of promoting "industrial peace" and of developing "a more harmonious feeling between employers and employees." "Here," he said, "you have expressed a principle that is vital to the future of each of us personally and to the future of the industry."

Similar opinions were expressed by Richard Gray, president of the AFL-CIO Building and Construction Trades Department; James Marshall, executive director of Associated General Contractors of America; Paul Geary, trustee for the Council of Mechanical Specialty Contracting Industries; and Rodney Lockwood, past president of the National Association of Home Builders.

General theme was this: Our interests are inseparable. Let us work together to solve our problems. By using the voluntary processes of free enterprise, we may be able to avoid further government regulation and red tape.

Suggested goals toward which joint efforts should be directed included:

- Reduction of construction costs and expansion of construction markets.
- Elimination of jurisdictional work stoppages.
- A building trades victory over industrial unions in an ultimate clarification of conflicting claims to the right to perform in-plant industrial construction work.

• **Costs and sales**—Lead on construction cost reduction was taken by Mr. Gray, who suggested formation of an industry-wide working committee to promote the interests of the industry. As part of his proposed program for combating inflation, the committee, he said, should direct its efforts to reducing costs through such devices as use of new materials and techniques to increase productivity, and to developing a money market that can meet the needs of the industry at reasonable interest rates. Another aspect of his five-point committee program would be an effort to induce the government to abandon its tight money policies, and to pass legislation for housing, school, hospital, airport and other construction projects.

Contractor spokesmen who addressed the convention agreed without exception that joint efforts must be made to prevent the industry from pricing itself out of the market. This can be done, Mr. Haxby said, "if we continue to recognize that we are partners in this project and use every opportunity to work together for our mutual interest."

Gravest concern over building costs was expressed by NAHB's Rodney Lockwood, who said the homebuilding industry "is sick today." He said its "No. 1 problem" is to get "market sales back up to the levels we had in normal years in the post-war era."

Emphasizing the need for an improvement in technology, particularly in on-site productivity, he called for joint efforts to reduce costs and said, "I don't think there are any problems in our industry that we can't solve by good teamwork."

• **Jurisdiction**—The same sort of teamwork was called for to lessen jurisdictional strife within the building trades and to curb industrial union encroachment on work usually done by contractors.

Two forms of contractor contribution to the first problem were suggested.

Mr. Marshall said that if the industry is to make the most effective use of its worker skills, then "the employers of the industry must forego their privilege of making (work) assignments as they please and instead by agreement make assignments in accordance with certain previous decisions" as interpreted and applied by the National Joint Board. And Mr. Geary noted that a new committee formed by the AGC and Council of Mechanical Specialty Contracting Industries already is planning a program for promotion of management activities that will reduce the causes of disputes.

The National Joint Board was praised for its achievements and the Building and Construction Trades Department was commended for its efforts to improve union compliance with the board procedure. But much remains to be done, it was agreed, to put an end to the time, money and goodwill lost by jurisdictional disputes.

A more delicate problem of mutual concern is the conflict between building trades and industrial unions—one which Mr. Marshall said threatens to destroy the contract method of construction.

Bitterest criticism was directed against industrial union use of labor contract clauses restricting the right of industrial management to hire outside contractors. And in the fight against these, the building trades were assured of contractor support and cooperation.

Mr. Geary said the AGC-Mechanical Contractor committee would try "to sell industrial management on refraining from signing" restrictive agreements. And Mr. Marshall declared that if the AFL-CIO can't solve the problem then "construction employers will have to re-

sort to laws controlling restraint of trade and monopoly."

These are only a few of the areas and problems being currently explored for joint union-contractor action. But they herald a growing inclination to recognize the community of interest that exists between the two groups and to look at the industry's problems in a new perspective.

FRANK J. ROONEY past president of AGC, presents an apprenticeship award to Jack Meggison, as William F. Patterson, special assistant to the Secretary of Labor, looks on.

Industry's Future Tied to Apprenticeship

The first annual Frank J. Rooney Trophy for the outstanding apprentice in the building trades in Greater Miami has been presented to Jack L. Meggison, who is completing his last year in apprenticeship training in plumbing at Lindsay Hopkins Vocational School.

Sponsor of the award is Frank J. Rooney, Miami contractor and past president of Associated General Contractors of America, Inc. In presenting the award, Mr. Rooney said its purpose is to encourage more qualified young men to enroll in the apprenticeship program and to recognize the achievements of those who do so.

Crafts competing for the award won by Mr. Meggison included the carpenters, sheet metal workers, roofers, electricians, air conditioning and refrigeration workers, iron workers, and plasterers. Mr. Rooney said he believes the future of labor and management in the construction industry depends, to a great degree, upon the success of the apprenticeship program which is designed to train tomorrow's craftsmen and leaders.

At the end of last year, the industry had 112,619 registered apprentices. This represented an improvement of 11% over the previous year but many of the building trades are admittedly not receiving new journeymen fast enough to replace their losses through death and retirement.

Mr. Patterson, former Director of the Federal Bureau of Apprenticeship, called the Rooney trophy "one of the most productive, stimulative devices yet discovered for improving the skills of the nation" and said he believes other cities should be encouraged to institute similar award programs.

COMMENT
from the
BUTLER ENGINEER

Of ducks, women and amazing Ready Mix Plant portability . . .

Memories of the most glorious duck hunting this past Fall insistently weave themselves into my concentration on automation, batchers, portability problems and the like. It was in the Winnipeg area — and it's probably the finest hunting on the North American continent. So if you get a TX4 Plant shaped like a mallard in flight above a golden marsh, you'll know what influenced the design.

It's my observation that men's conversation at work centers around two subjects: Business and women. On a hunting trip there are also two subjects: ducks and women.

Now for the first time you can have a high production Ready Mixed plant with the same portability that the Butler TX4 offers the Roadbuilder. It's called the Butler HP-85. It has the same capacity as a large permanent plant and at the same time such flexibility of movement that you can set it up for each job and eliminate costly mileage for your trucks.

The HP-85 is a completely automatic plant, ruggedly built and will turn out 200-plus yards an hour of beautifully controlled, highest quality concrete. It erects faster than other makes of makeshift portable plants you may have encountered.

In other words, the HP-85 gives you the full capacity of a big plant but with the economies of a small plant where high production is not required.

You'll see the HP-85 at the Ready Mix Show in Chicago.

See you there.

The Butler Engineer

BUTLER BIN COMPANY
WAUKESHA, WISCONSIN

Miami's program, he declared, is one way the construction industry can attack the big problem of meeting the demands that will be made upon it in the future for skilled craftsmen.

The importance of apprenticeship—and journeymen—training to unions, contractors and the public was officially recognized by organized labor at the recent building trades' and AFL-CIO conventions in Atlantic City, where greater effort to stimulate and promote all types of training for the nation's work force was urged.

Union Organization

Building trades appoint new regional directors to promote unionization

To help further the unionization of unorganized construction workers, the AFL-CIO Building and Construction Trades Department has appointed seven regional directors to represent the department in the United States and Canada.

The decision to divide the two areas into seven regional districts and to give the department direct representation in each was based, according to President Richard Gray, on "the premise that where we have a strong and efficient Building and Construction Trades Council, we also have a very strong percentage of unionization."

Duties of the regional directors, as specified by the department's Executive Council, are to visit each local and state council in their respective regions and to determine the percent of local union affiliation, reasons for nonaffiliation and extent of nonunion conditions. Reports and recommendations will be made to the department to help it in achieving its goals of maximum efficiency and unionization.

The regional program was recommended by the department's Administrative Committee and was approved on December 1 by the Executive Council. Appointment of the directors, except for Eastern Canada, was approved by convention action on December 4.

In support of the program, President Gray said that "organization of the unorganized building and construction tradesmen has not kept pace with the increased on-site construction activity" and "our potential has not been fully realized."

Some of the roadblocks he listed are "unfair" Taft-Hartley Act provisions, right-to-work laws and a "strong anti-labor attitude" in many parts of the South.

Ventilators Spark Bitter Feud

Sheet metal workers resist "jurisdictional invasion" by other unions; legislative problems ahead

A type of jurisdictional dispute close to the heart of the building trades unions has threatened two large construction projects in the Akron, Ohio, district. In each instance, ventilating equipment and the sheet metal workers union are involved.

Projects are a multi-million-dollar plant of General Motors' Euclid Division in Hudson township and a $925,000 building in Akron for the East Ohio Gas Co.

As in a dispute of long standing between the union and contractors who use ventilating equipment produced by the Burt Manufacturing Co., the sheet metal workers objected to use of ventilators made by employers who don't have collective bargaining agreements with the union.

Initial arrangement on the General Motors job called for ventilators produced by the Allen Co., Rochester, Mich., which is organized by the United Auto Workers union. The East Ohio Gas Co. project is using ventilators made by Carnes Corporation, Verona, Wis., whose workers are represented by the International Association of Machinists. (In the Burt Case, which has received nationwide attention, the ventilators are made by workers represented by the United Steelworkers of America.)

The three cases involve what building trades' President Richard Gray has called, "practical trade union bread and butter facts of life."

In a recent comment on the Burt situation, he said the basic question—not only for the sheet metal workers but for all the building trades—are preservation of work jurisdiction and protection of wage scales and working conditions.

Under a truce reached at the General Motors project, all metal fabricating work on the ventilating equipment now is done, either on-site or off-site, by Carlson Brothers, a Detroit subcontractor who employs members of the sheet metal workers union. Assembly of the basic ventilating unit still is done by the Allen Co. But the rest of the unit, including sheet metal covering, is assembled and installed by Carlson workers.

A settlement reached in the East Ohio Gas dispute leaves the sheet metal workers where they were before—installing equipment made by members of the machinists union.

• **Problem**—Hard core of the problem is one of jurisdiction. At the recent building trades convention, Mr. Gray summed it up in these words:

"The Sheet Metal Workers International Union, in an effort to protect its work jurisdiction and the wage scales and working conditions of its membership, has been using its influence and persuasion with sheet metal contractors to fabricate sheet metal products themselves or else use sheet metal products of fabricators and manufacturers who are in collective bargaining agreement with local unions of the Sheet Metal Workers International Union.

"It is unmistakably clear that the Sheet Metal Workers International Union has jurisdiction over all sheet metal fabricating and manufacturing shops as well as the installation of such sheet metal products.

"If we lose on this point, it will mean that the steelworkers and other industrial unions will be free to invade the boilermakers' shops, the carpenters' mill shops, the plumbers and steamfitters' fabrication shops, the electricians' jurisdiction and others at a reduced wage scale and we will be required to handle and install their products to the detriment of our own membership's work jurisdiction, wage scales and working conditions."

Speaking of the Burt Case, he said, "The steelworkers should confine themselves to the production of steel."

• **Conflicts and legislation**—For the AFL-CIO, the problem is as formidable as the construction-by-contract feud between building trades and industrial unions. It may well become a critical factor in union attempts to present a united front on upcoming legislation.

In an AFL-CIO investigation of the Burt Case conducted by President George Meany, the sheetmetal workers' activity was viewed as a violation of the federation's constitutional provision banning raiding of one union by another. But the sheet metal workers say they are not raiding because they have no intention of organizing the workers in the Burt plant. To Mr. Gray, the question is one of unlawful invasion of the sheet metal workers' jurisdiction by another union.

The AFL-CIO Industrial Union Department, headed by Walter Reuther (also president of the union involved

in the General Motors' Euclid Division case), has tagged the sheet metal workers' activity as a "boycott." It has asked for an AFL-CIO ban on the refusal by one union to handle materials produced by another union. No action has been taken yet in that direction.

But Labor Secretary James P. Mitchell has included in the Administration's legislative program (see page 21) a proposal that would accomplish the same ends. He would outlaw union pressure on an employer to induce him to cease doing business with another employer. The building trades already feel that the Taft-Hartley Act facilitates invasion of their jurisdiction by industrial unions and the new proposal is apt to produce some fireworks inside labor when it goes before Congress.

Hot-Cargo Clauses Given Another Set Back by ICC

Another prop was pulled out from under hot-cargo clauses in labor contracts last week when the Interstate Commerce Commission ruled that common carriers cannot consent to insertion of such clauses in their contracts with the teamsters union.

The ruling was issued in a case started by the Galveston Truck Line Corp. of Houston, a nonunion firm whose cargoes were refused acceptance by other lines that honored hot-cargo clauses in their labor contracts. The clauses allow the teamsters not to handle goods slupped by employers they consider unfair.

No attempt was made by the ICC to rule on the validity of the clauses. It merely said carriers cannot simultaneously honor the clauses and keep their ICC permits because they cannot bargain away "their statutory obligation to serve the public."

The validity or invalidity of hot-cargo clauses, frequently used by the building trades, never has been clearly established either by the National Labor Relations Board or the courts. Some have held the clauses are valid and can be enforced as a matter of contract law; others have held them invalid at their inception, or valid but unenforceable. The question is now before the U. S. Supreme Court.

The Administration will ask the next session of Congress to clarify the issue by amending Taft-Hartley Act to outlaw any attempt to enforce the clauses.

Gimmick suggested by Mr. Mitchell is a redefinition of secondary boycott activity to include coercion of employers.

OFFICIAL PROPOSALS

RATE: The rate for Official Proposal advertising is $2.40 per line or fraction set solid. Where the advertisement is set other than solid, the space is measured by total space occupied and charged on basis of 12 lines to the inch.

CLOSING DATE: Friday 10:30 A.M. for issue dated the following Thursday.

SEND COPY TO: Official Proposal Division, Engineering News-Record, 330 West 42nd Street, New York 36, N. Y.

Bids: January 9, 1958.

Soil Explorations and Foundations Investigations

STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of Highway Law, sealed proposals will be received until 10:30 a.m. Eastern Standard Time, on January 9th, 1958, by Henry A. Cohen, Director, Bureau of Contracts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y. for:

SOIL EXPLORATIONS AND FOUNDATIONS AT VARIOUS SITES ON INTERSTATE ROUTE 502, ESSEX-CLINTON COUNTY LINE TO SOUTH PLATTSBURGH, SECTION 7A-1 AND 7A-2, PROJECT I-111(4), ESSEX AND CLINTON COUNTIES, WHICH CONSTITUTES CONTRACT NO. SPEC. FA-SM-115.

Maps, plans and specifications may be examined and obtained at the following offices:

(b) (a) Bureau of Contracts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany 1, N. Y.
(b) Mr. Robert W. Sweet, District Engineer, New York State Department of Public Works, 144 Van Duzee Street, Watertown, New York.
(c) Mr. William M. Trainer, Associate Contract Engineer, Department of Public Works, 270 Broadway, New York City.

The deposit for a set of plans, specifications and proposal forms is $5.00. A refund in full will be made to bidders for return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50 percent of deposit.
The Engineer's Estimate of cost for this work is $14,850.00.
Proposal for this contract must be submitted in separate sealed envelope with the name of the contract plainly endorsed on the outside of the envelope. Proposal must be accompanied by draft or certified check, payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum of $1000.00. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instruction to Bidders". The right is reserved to reject any or all bids.

JOHN W. JOHNSON
SUPERINTENDENT OF PUBLIC WORKS

Bids: January 6, 1958

State of New Jersey Department of Conservation and Economic Development Division of Planning and Development

137 EAST STATE STREET
TRENTON 25, NEW JERSEY
NAVIGATION BUREAU
PROJECT No. 550

December 19, 1957

NOTICE TO BIDDERS

Sealed bids will be received Monday, January 6, 1958 at 11:30 A.M. Eastern Standard Time by the New Jersey Department of Conservation and Economic Development under Project 550 for sand by-passing project at Shark River Inlet, Monmouth County, New Jersey. Estimated quantity of sand is 250,000 cubic yards. Bidders must prequalify. Plan deposit $25.00. For particulars address State Navigation Bureau, 137 East State Street, Trenton 25, New Jersey.

JOSEPH E. McLEAN
COMMISSIONER

Bids: January 2, 1958.

Soil Explorations and Foundation Investigations

STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of Highway Law, sealed proposals will be received until 10:30 a.m. Eastern Standard Time, on January 2, 1958, by Henry A. Cohen, Director, Bureau of Contracts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y. for:

SOIL EXPLORATIONS AND FOUNDATION INVESTIGATIONS AT VARIOUS SITES ON INTERSTATE ROUTE 502, MALTA TO SARATOGA SPRINGS, SECTION 4, PROJECT I-111(62) SARATOGA COUNTY, WHICH CONSTITUTES CONTRACT NO. SPEC. FA-SM-112.

Maps, plans and specifications may be examined and obtained at the following offices:
(a) Bureau of Contracts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany 1, N. Y.
(b) Mr. G. L. Nickerson, District Engineer, New York State Department of Public Works, 353 Broadway, Albany, New York.
(c) Mr. William M. Trainer, Associate Contract Engineer, Department of Public Works, 270 Broadway, New York City.

The deposit for a set of plans, specifications and proposal forms is $5.00. A refund in full will be made to bidders for return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50 percent of deposit.
The Engineer's Estimate of cost for this work is $29,400.00.
Proposal for this contract must be submitted in separated sealed envelope with the name of the contract plainly endorsed on the outside of the envelope. Proposal must be accompanied by draft or certified check, payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum of $2,000.00. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instruction to Bidders".
The right is reserved to reject any or all bids.

JOHN W. JOHNSON
SUPERINTENDENT OF PUBLIC WORKS

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Prefer several years or more experience in any of these fields:

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BUILDINGS
EXPRESSWAYS
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POSITIONS VACANT

Civil Engineer, major in soil mechanics and foundation engineering, to assist in writing reports and supervise laboratory work. Opportunity for advancement with young growing firm in southwest. Furnish full particulars regarding education and experience as well as salary required. P-6803, Engineering News-Record.

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Superintendent thoroughly qualified, large sewer & watermain installations. Permanent, N. Y. State. P-6844, Engineering News-Record.

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Concrete paving superintendent-engineer. Full charge, steady work, experienced and references. Ohio location. P-6839, Engineering News-Record.

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Reinforcing Bar Manager. Degree required. In charge of reinforcing bar department sales and engineering. Salary open. Write St. Paul Foundry & Mfg. Co., 500 Como Ave., St. Paul 3, Minnesota.

(Continued on opposite page)

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POSITIONS VACANT
(Continued from opposite page)

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City Engineer for Progressive So. Indiana City, badly needed. You will work with streets, sewers, water, people. $7200, or more if you are that good. P-6896, Engineering News-Record.

Civil Engineers—Resident engineers to supervise construction inspection of earth fill and concrete dams in central and western Pennsylvania. Must be graduate civil engineer and show satisfactory experience in inspection and administration of contract work. Salary open. Submit resume, salary requirements and three references. P-6897, Engineering News-Record.

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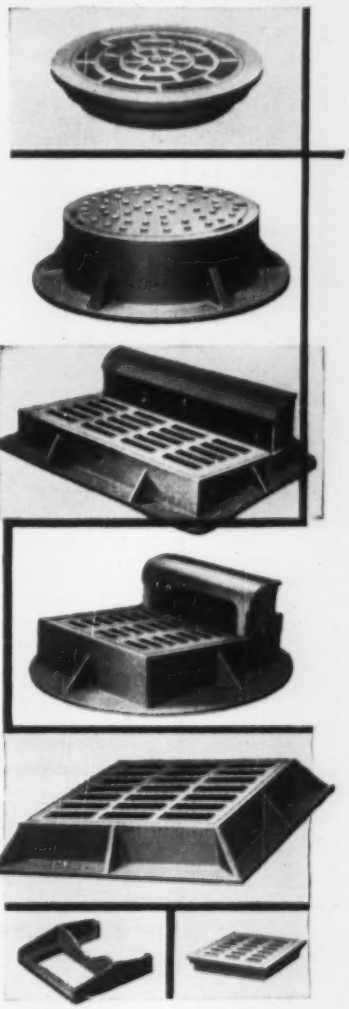

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"Brain" Is the Wrong Word

CALLING AN ELECTRONIC COMPUTER an electronic brain, as has been the wont of many persons, misses the mark by just about 180 degrees. The word, "brain," connotes the ability to think, while the computers, being found so useful these days by civil engineers, are in reality high speed morons.

Use of this singularly miscast word also gives the impression that people can simply send problems to the computer without thinking about them. Actually setting up the problems for computers to solve puts a premium on very high-order thinking. The real value of the computer is that it can take care of the mathematical drudgery, and thus allow more time for the engineer to think.

The most often cited advantages of computers—savings in engineering manhours, elapsed design time, design cost and construction cost—may in the end be secondary to its influence in increasing the dignity of civil engineering. For with computers, engineers can devote their time to engineering thinking, and need no longer be slaves to the slide rule. So let's have an end to calling electronic computers brains. They can't think, and they never will.

Scientific Interchange

THE TECHNIQUES OF THE SCIENTIST have frequently been used to advance the practice of civil engineering—the development of soil mechanics, for example, having been aided immeasurably by knowledge from the chemical, mineralogical and pedological fields. The reverse of this process is also possible, as was shown at the recent annual meeting of the Geological Society of America.

The two leading papers at the main technical session of this eminent scientific body dealt with a long-standing problem in pure geology—how it has been possible for immense masses of solid rock, many miles long and wide, and hundreds of feet thick, to be moved over a fault plane for distances measured in miles. Application of the simple laws of mechanics will show that, normally, such movements are impossible since the theoretical stresses, which would result, exceed the known strengths of rocks. Nevertheless, "over-thrust faulting" (as the phenomenon is called) does occur.

Geologists M. King Hubbard and W. W. Rubey revealed how a rational explanation is possible if the concept of pore-water pressure (on the fault plane) is incorporated into the mechanical analysis. They freely acknowledge that they derived this idea from their knowledge of soil mechanics techniques. They also used tri-axial and direct shear tests upon large rock samples to illustrate the possibilities which use of the new theory presents to geologists.

Such interchanges of knowledge between science and engineering are important to the advancement of both of these disciplines. This recent example of how engineering has aided the field of pure geology is encouraging. It also should be challenging in that it makes one wonder where and how much progress is being impeded from lack of such intercourse, so vast and complex are the relevant fields of human knowledge.

Give Sewerage Aid a Chance

THE PROPOSAL by the Joint Federal-State Action Committee that financial aid for pollution abatement projects be given over from federal to state control appears doomed to failure. For if the cities—through their American Municipal Association—were strong enough to write the grants-in-aid into Public Law 660 as it passed in 1956, they will surely have the strength in 1958 to keep an item in the federal budget to implement this law's aid provision. Their case against changing horses in midstream can, moreover, be bolstered by pertinent arguments that the federal-aid program is working effectively.

It would appear that members of the Joint Committee—Cabinet members, White House staffers and governors—are a little late in realizing that the ideal would be to have municipal pollution control financed, as well as administered, entirely as a city-state venture. They also have forgotten how little had been accomplished when this approach was used.

Their theory now is that certain taxing powers should be returned from federal control to the states—for financial aid to cities for sewage works among other things. Trouble is, there are too many other things. There's hardly a state, given extra tax money, in which the electorate—or the legislators—could not find many things they would buy rather than sewage plants. If this were not so, the federal government would not have been brought into the picture in the first place.

To leave the states on their own, with more money intended to stir new sewage works construction, could well destroy the 10-year, $500 million program now started. The Federal Water Pollution Control Act spells out about as sound a grants-in-aid provision as could be written. It leaves with the states control over who should receive aid; the federal government principally gets up the money—something the states had proved themselves unable to do. This law is now working. There is evidence that it is working well—with the desired effect of stimulating sewage plant construction.

The cities and their allies will be right in fighting any change at this time. Let the Joint Committee look further for federal financing activities more apt to be workable at state level; aid to cities in the fight against water pollution is not one of these.

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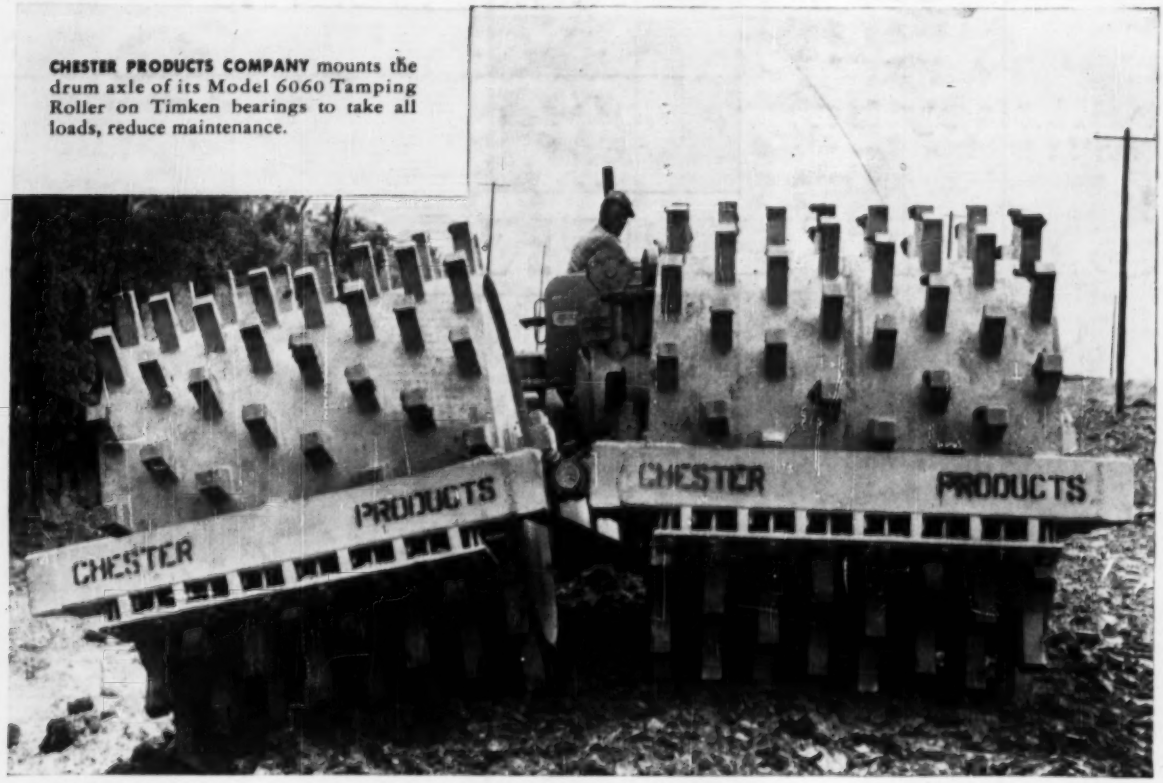

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